

MINI COMPONENT SYSTEM GX-900

SERVICE MANUAL

GX-900 is composed of GX-900 and NX-GX500.

IMPORTANT NOTICE

This manual has been provided for the use of authorized YAMAHA Retailers and their service personnel. It has been assumed that basic service procedures inherent to the industry, and more specifically YAMAHA Products, are already known and understood by the users, and have therefore not been restated.

WARNING: Failure to follow appropriate service and safety procedures when servicing this product may result in personal injury, destruction of expensive components, and failure of the product to perform as specified. For these reasons, we advise all YAMAHA product owners that any service required should be performed by an authorized YAMAHA Retailer or the appointed service representative.

IMPORTANT: The presentation or sale of this manual to any individual or firm does not constitute authorization, certification or recognition of any applicable technical capabilities, or establish a principle-agent relationship of any form.

The data provided is believed to be accurate and applicable to the unit(s) indicated on the cover. The research, engineering, and service departments of YAMAHA are continually striving to improve YAMAHA products. Modifications are, therefore, inevitable and specifications are subject to change without notice or obligation to retrofit. Should any discrepancy appear to exist, please contact the distributor's Service Division.

WARNING: Static discharges can destroy expensive components. Discharge any static electricity your body may have accumulated by grounding yourself to the ground buss in the unit (heavy gauge black wires connect to this buss).

IMPORTANT: Turn the unit OFF during disassembly and part replacement. Recheck all work before you apply power to the unit.

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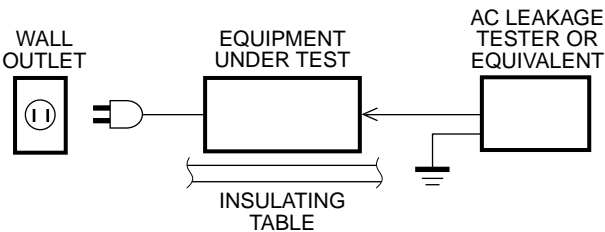


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This Service Manual uses recycled paper.



TO SERVICE PERSONNEL

1. Critical Components Information.
Components having special characteristics are marked and must be replaced with parts having specifications equal to those originally installed.



CAUTION : USE OF CONTROLS OR ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

THE COMPACT DISC PLAYER/MINI DISC RECORDER SHOULD NOT BE ADJUSTED OR REPAIRED BY ANYONE EXCEPT PROPERLY QUALIFIED SERVICE PERSONNEL.

PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs a laser. Therefore, be sure to carefully follow the instructions below when servicing .

CD Laser Diode Properties

- Material : GaAlAs
- Wavelength : 780 nm
- Emission Duration : Continuous
- Laser Output : max. 44.6 μ W*

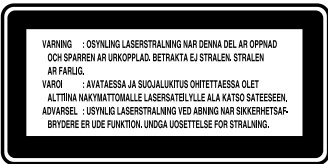
* This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.

MD Laser Diode Properties

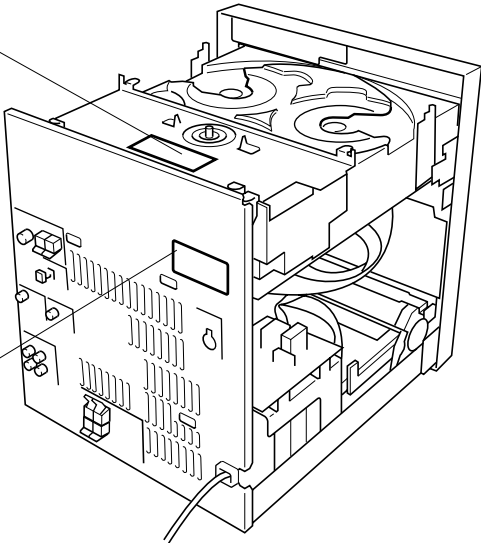
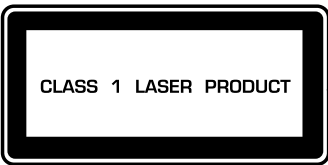
- Material : GaAlAs
- Wavelength : 785 nm
- Pulse time:
 - Read mode ... 0.8 mW Continuous
 - Write mode ... max 10 mW 0.5S min cycle 1.5S Repetition

When checking the laser diode emission, keep your eyes more than 30 cm away from the objective lens.

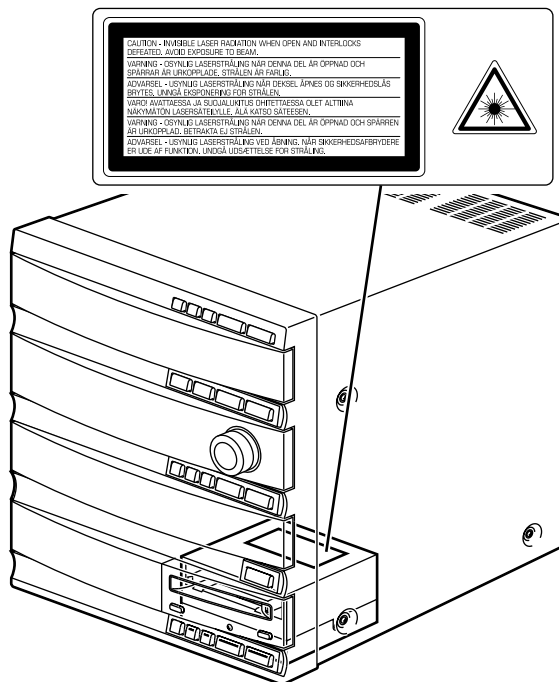
② B, G models



① B, G models



② A, B, G models

**English**

- ① THIS PRINTING (SEE POSITION SHOWN IN THE ILLUSTRATION) INFORMS THE USER THAT THE APPARATUS CONTAINS A LASER COMPONENT.
- ② THIS LABEL (SEE POSITION SHOWN IN THE ILLUSTRATION) WARNS THAT ANY FURTHER PROCEDURE WILL BRING THE USER INTO EXPOSURE WITH THE LASER BEAM.

CAUTION : USE OF CONTROLS, ADJUSTMENTS OR PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN, MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

Swedish

- ① DENNA MÄRKNING (SE FIGUR) UPPLYSER OM ATT DET I APPARATEN INGÅR EN LASERKOMPONENT AV TYP KLAS 1.
- ② VARNINGSMÄRKNING (SE FIGUR) FÖR STRÅLNING. INGREPP I APPARATEN BÖR ENDAST FÖRETAGAS AV FACKMAN MED KÄNNEDOM OM LASER. APPARATEN INNEHÅLLER EN LASERKOMPONENT SOM AVGER STRÅLNING ÖVERSTIGANDE GRÄNSEN FÖR LASERKLASS 1.

VARNING : OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD OCH SPÄRREN ÄR URKOPPLAD. STIRRA EJ I STRÅLEN OCH BETRAKTA EJ STRÅLEN GENOM OPTISKT INSTRUMENT.

Danish

- ① DETTE MÆRKAT ER ANBRAGT SOM VIST I ILLUSTRATIONEN FOR AT ADVARE BRUGEREN OM AT APPARATET INDEHOLDER EN LASERKOMPONENT.
- ② DETTE MÆRKAT OM LASEREN ER ANBRAGT PÅ APPARATET SOM EN OPLYSNING OM AT APPARATET INDEHOLDER ET LASERKOMPONENT.

ADVARSEL : USYNLIG LASERSTRÅLING VED ÅBNING, NÅR SIKKERHEDSAFBRYDERE ER UDE AF FUNKTION. SE IKKE IND I STRÅLEN-HELLER IKKE MED OPTISKE INSTRUMENTER.

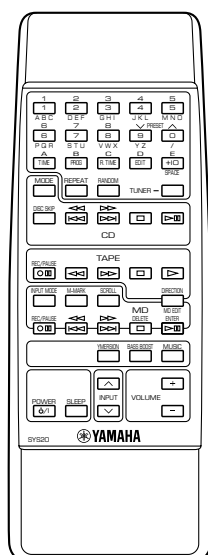
ADVARSEL : USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES OG SIKKERHEDSLÆS BRYTES. STIRR IKKE INN I STRÅLEN ELLER SE DIREKTE MED OPTISKE INSTRUMENTER.

Finnish

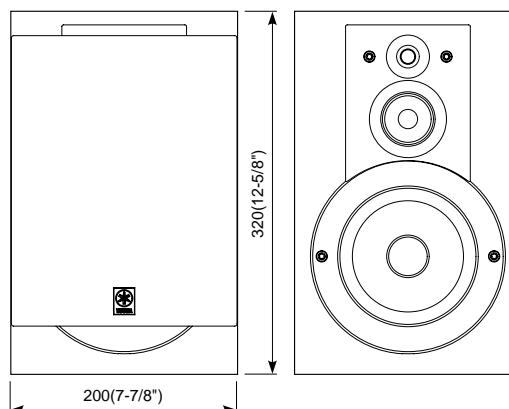
VARO! :

AVATTAESSA JA SUOJALUKITUS OHITETTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASER-SÄTEILYLLE. ÄLÄ TUIJOTA SÄTEESEEN ÄLÄKÄ KATSO SITÄ OPTISEN LAITTEEN LÄPI.

▼ A model

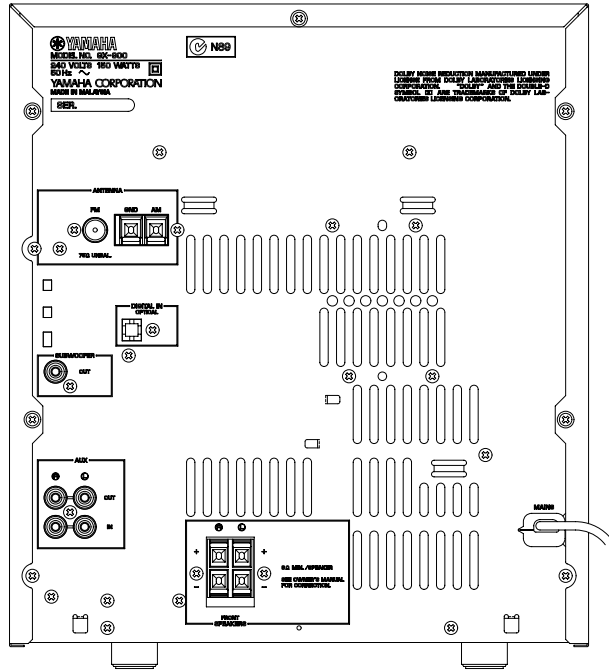


● **NX-GX500**

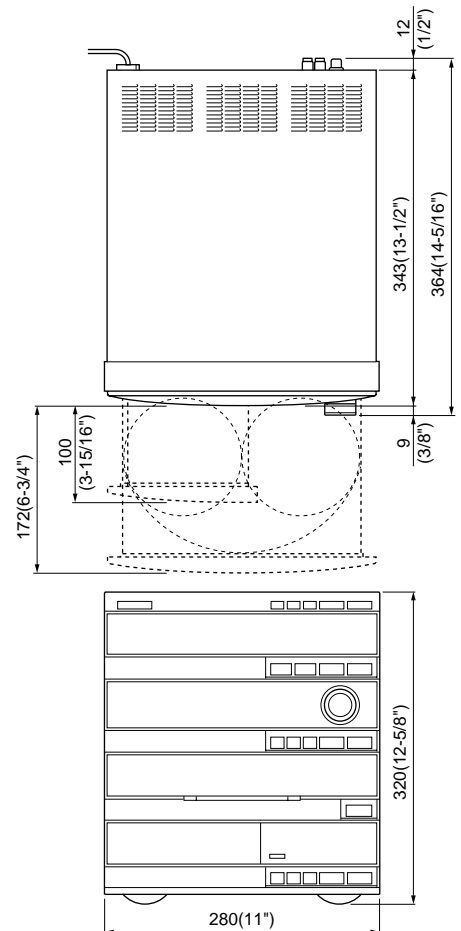
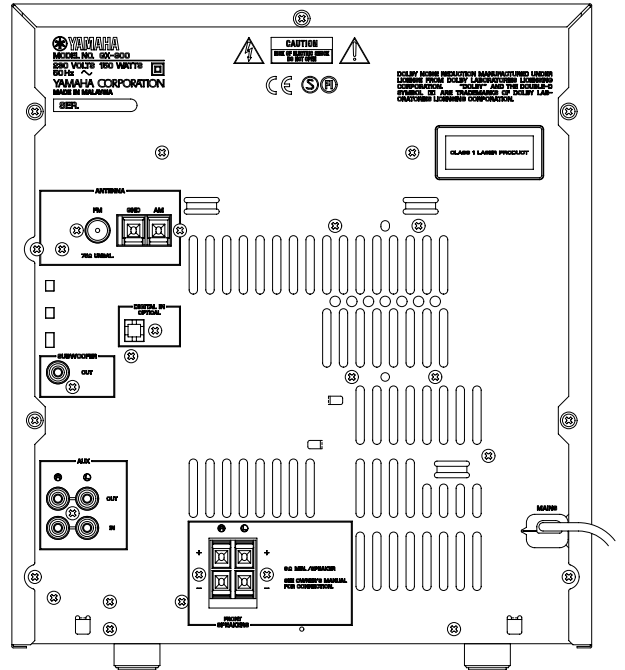


REAR PANELS

▼ A model



▼ B, G models



SPECIFICATIONS

AMPLIFIER SECTION

Minimum RMS Output Power per Channel	
1kHz, 0.9% THD, 6Ω	80W + 80W
1kHz, 10% THD, 6Ω	100W + 100W
Input Sensitivity/Impedance	
AUX	200mV/47kΩ
Spectrum Analyzed Band	5 band
	(100Hz, 350Hz, 1kHz, 3.5kHz, 10kHz)

TUNER SECTION

FM Tuning Range	87.50 to 108.00MHz
AM Tuning Range	531 to 1,611kHz
FM Usable Sensitivity (75Ω)	
DIN Mono, S/N 30dB	1.8μV

CD CHANGER SECTION

Type	3-Disc Carousel Auto-changer
Signal Readout	Non-contact, 3-beam semi-conductor laser pick-up
D/A Converter	1bit DAC
Filter	8-time oversampling digital filter
Wow & Flutter	Unmeasurable
Laser Diode Properties	
Material : GaALAs	
Wavelength : 780 nm	
Emission Duration : continuous	
Laser Output : max. 44.6 μW*	
* This output is the value measured at a distance of about 200 mm from the objective lens surface on the Optical Pick-up Block.	

TAPE DECK SECTION

Type	Auto Reverse
	4-Track 2-Channel playback/recording stereo Cassette Deck
Heads	
REC/PB	Hard permalloy
Erase	Double Gap Ferrite
Motors	
Main	DC servo motor
Tray Loading	DC motor
Wow & Flutter	
W.PEAK	±0.19%
W.RMS	0.09%
Frequency Response (-20dB)	
Type I/Normal tape	50 to 15,000Hz ± 3dB
Type II/High (CrO2) tape	50 to 16,000Hz ± 3dB
S/N Ratio	
NR off	58dB
Dolby B NR on	66dB

MD SECTION

System	Minidisc digital audio system
Recording Method	Magnetic field modulation overwrite
Reading Method	Non-contact optical pick up
Coding	ATRAC (Adaptive TRansform Acoustic Coding)
Laser Diode Properties	
Material : GaALAs	
Wavelength : 785 nm	
Pulse time :	
Read mode	0.8 mW continuous
Write mode	max. 10 mW 0.5S
	min. cycle 1.5S
	Repetition

SPEAKER SECTION (NX-GX500)

Type	3-Way Bass-reflex Design (Magnetic-Shielding Type)
Speakers	13cm (5-1/8") woofer 5cm (1-15/16") tweeter 2cm (13/16") super tweeter
Frequency Range	60 to 20,000Hz
Maximum Input	240W
Impedance	6Ω
Sound Pressure Level	87dB/1m • 2.45V (1W/6Ω)

GENERAL

Power Supply	
A model	AC240V, 50Hz
B, G models	AC230V, 50Hz
Power Consumption	150W (approx. 1W when set to the standby mode)
Dimensions (W X H X D)	
GX-900	280 X 320 X 364mm (11" X 12-5/8" X 14-5/16")
NX-GX500	200 X 320 X 218mm (7-7/8" X 12-5/8" X 8-9/16")
Weight	
GX-900	10.5kg (23 lbs. 2 oz)
NX-GX500	3.8kg (8 lbs. 6 oz)/each
Accessories	AM loop antenna X 1 Indoor FM antenna X 1 Remote Control Transmitter X 1 Battery (size "AA", R06) X 2 Speaker Cord X 2

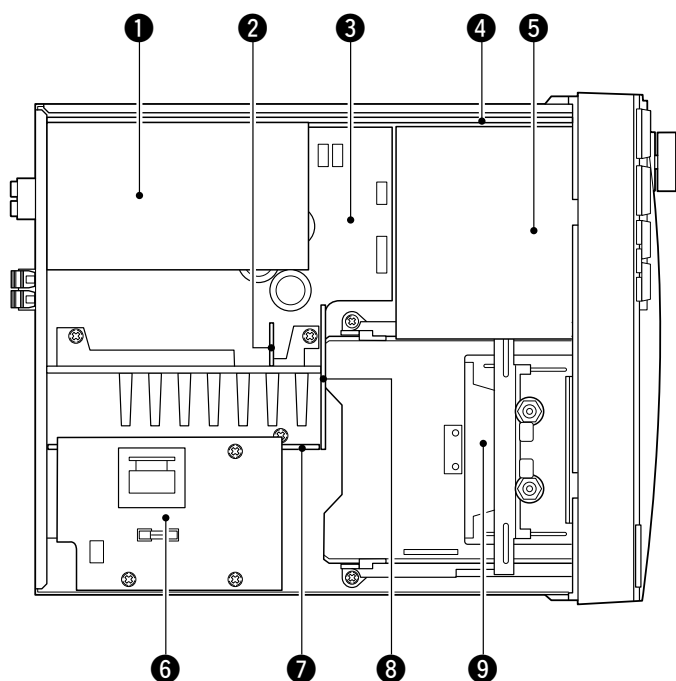
* Specifications subject to change without notice.

G	European model
B	British model
A	Australian model

* Manufactured under license from Dolby Laboratories Li-
censing Corporation. "DOLBY" and the double-D symbol
DD are trademarks of Dolby Laboratories Licensing Cor-
poration.

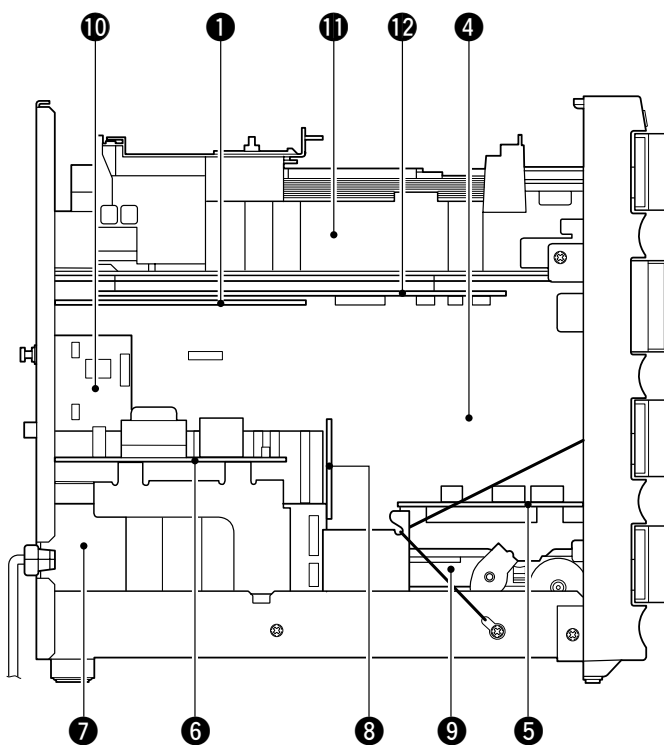
INTERNAL VIEW

Top side



- ❶ P.C.B. TUNER
- ❷ P.C.B. MAIN (5)
- ❸ P.C.B. MAIN (1)
- ❹ P.C.B. INPUT (1)
- ❺ MD MECHANICAL UNIT
- ❻ P.C.B. MAIN (2)
- ❼ P.C.B. MAIN (3)
- ❽ P.C.B. MAIN (6)
- ❾ DECK MECHANICAL UNIT

Left side



- ❿ P.C.B. INPUT (2)
- ⓫ CD MECHANICAL UNIT
- ⓬ P.C.B. CD

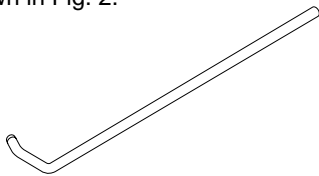
■ DISASSEMBLY PROCEDURES (Remove parts in the order as numbered.)

1. Removal of Top Cover

Remove 11 screws (①) in Fig. 1.

2. Removal of CD Mechanical Unit

- Disconnect the power cord from the AC outlet.
- Push the Friction Arm (the bottom side of the CD Mechanical Unit) with the Ejecting Tool or a tool like as shown in Fig. 2.



Ejecting Tool for CD Tray (TX946040)

- Pull the Tray forward approx. 5cm (2") and remove the CD Lid in Fig. 2.
- Push the Tray back to the original, closed position.
- Disconnect the Flat Connecting Cables (CB9) and remove 2 connectors (CB8 and CB7) in Fig. 2
- Remove 4 screws (②) and then remove the CD Mechanical Unit in Fig. 1.

3. Removal of Panel Unit

- Rotate the Loading Gear, then open the Tray and remove the Cassette Lid in Fig. 2.
- Push the Tray back to the original, closed position.
- Disconnect the flat connecting cables (CB10 and CB13) and remove a connector (CB805) in Fig. 2.
- Remove 6 screws (③ and ④) and then remove the Panel Unit in Fig. 1.

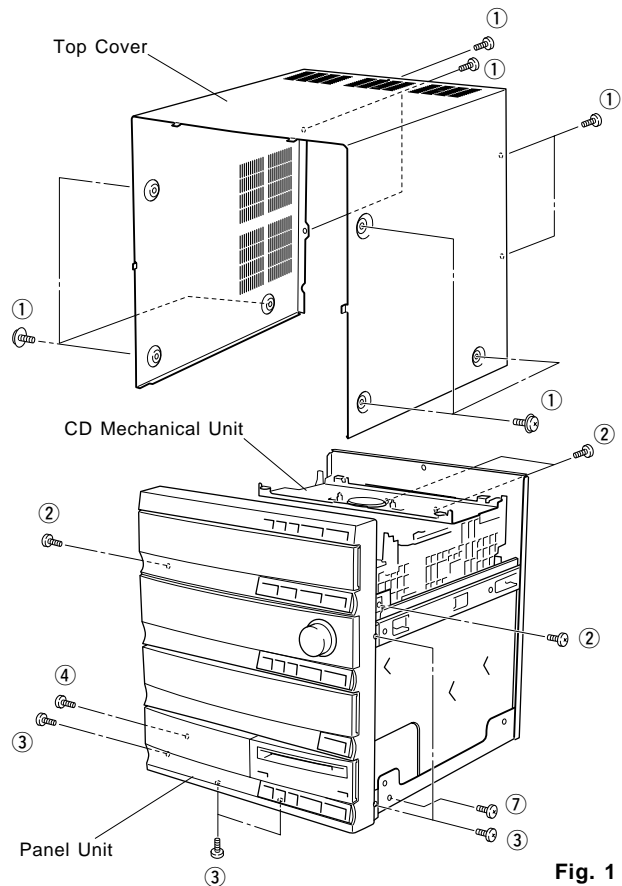


Fig. 1

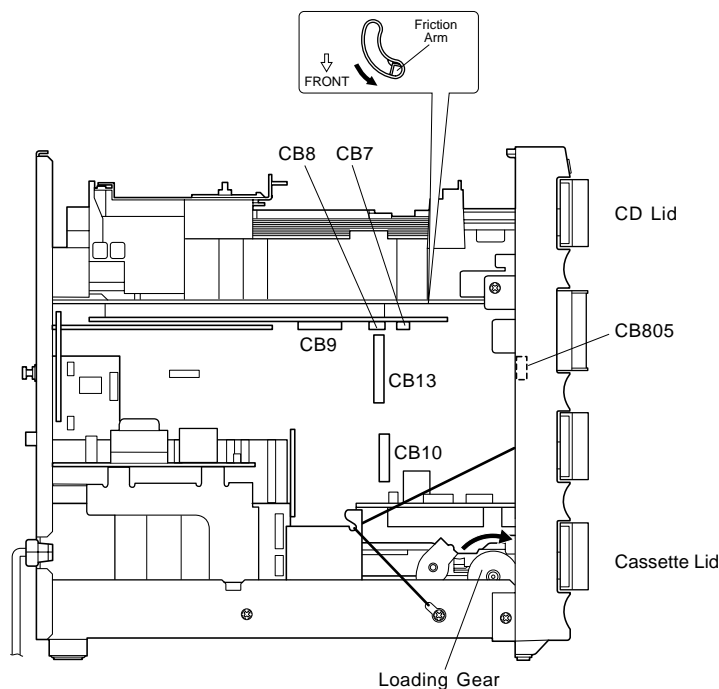


Fig. 2

4. Removal of Deck Mechanical Unit

- Remove 4 screws (⑤) and then remove the Deck Mechanical Unit in Fig. 3.
- Remove 3 connectors (W2, W3 and W4) in Fig. 3.

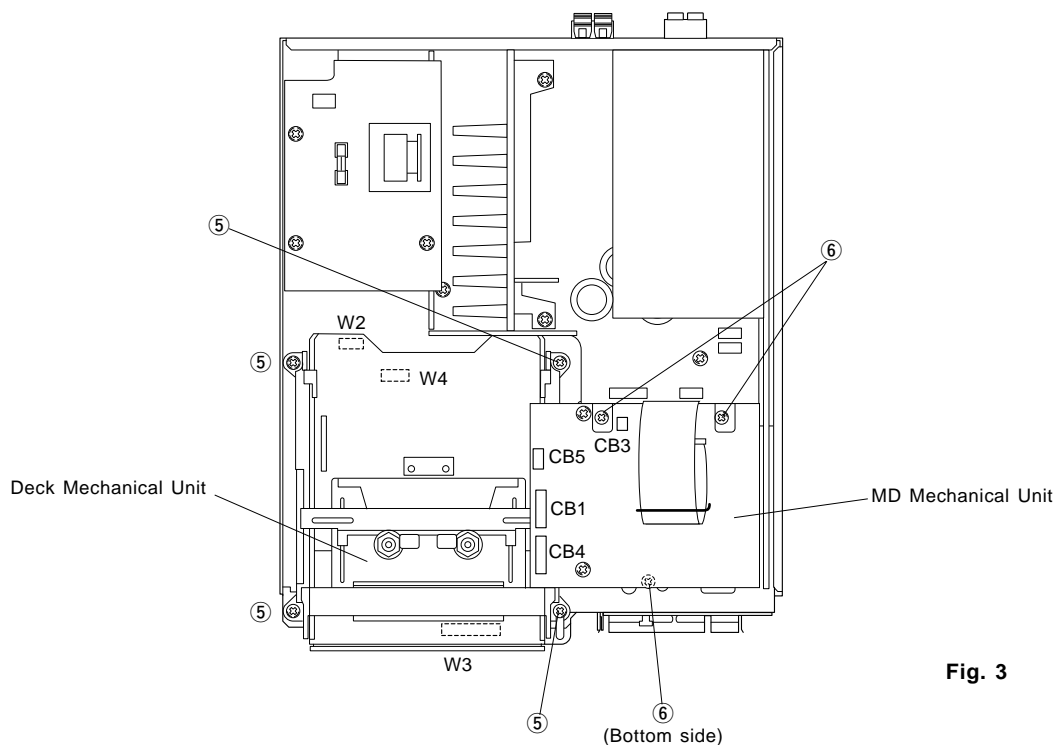


Fig. 3

5. Removal of MD Mechanical Unit

- Remove 3 screws (⑥) in Fig. 3 and 1 screw (⑦) in Fig. 1.
- Remove 4 connectors (CB1, CB3, CB4 and CB5) in Fig. 3.
- Remove the MD Mechanical Unit.

6. Removal of MD Mechanism

- Disconnect the flat connecting cable in Fig. 4.
- Remove 4 screws (⑧) in Fig. 4.
- Remove 2 screws (⑨) in Fig. 4.
- Remove 2 screws (⑩) in Fig. 4.

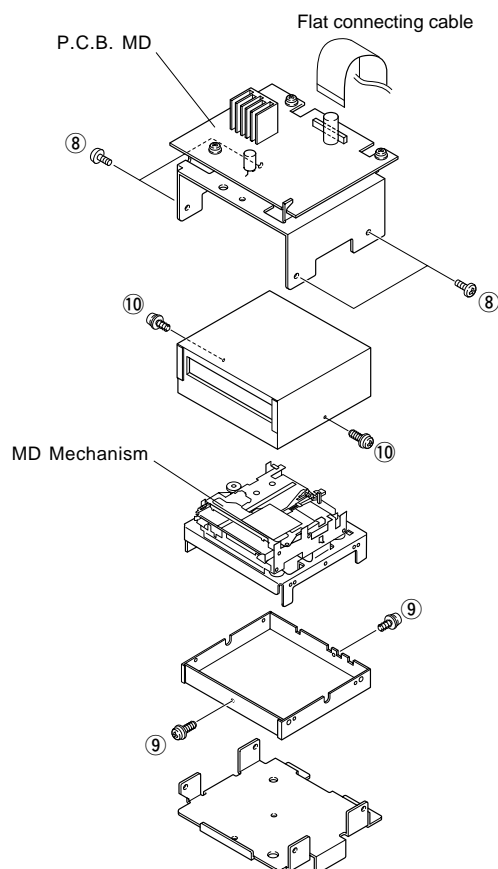


Fig. 4

7. Operation Check of P.C.B. CD

- Remove the CD Mechanical Unit.
- Remove 4 screws (⑪) and then remove the P.C.B. CD in Fig. 5.
- Place blocks (at 3 locations) to hold the CD Mechanical Unit horizontally as shown in the Fig. 6.
- Connect the Flat Connecting Cable (CB9) and 2 connectors (CB8 and CB7) in Fig. 5 and Fig. 6.
- Connect the power plug and turn on the Power Switch.

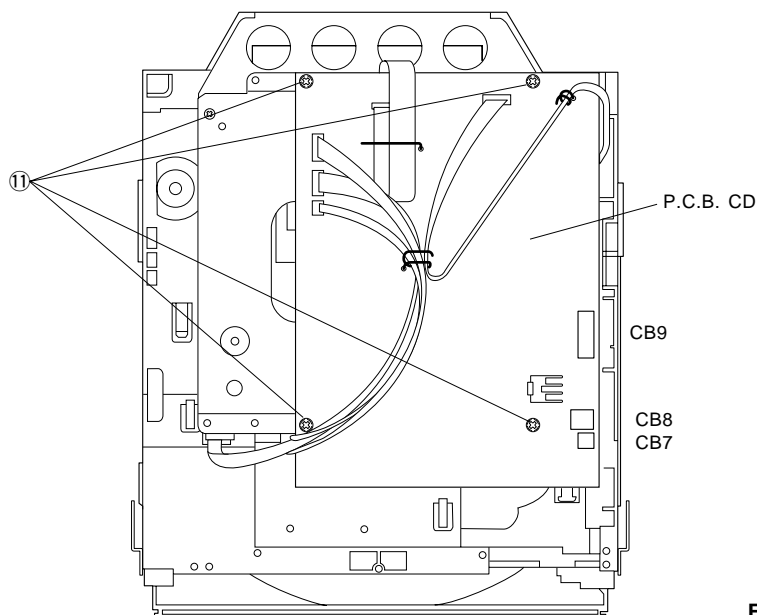


Fig. 5

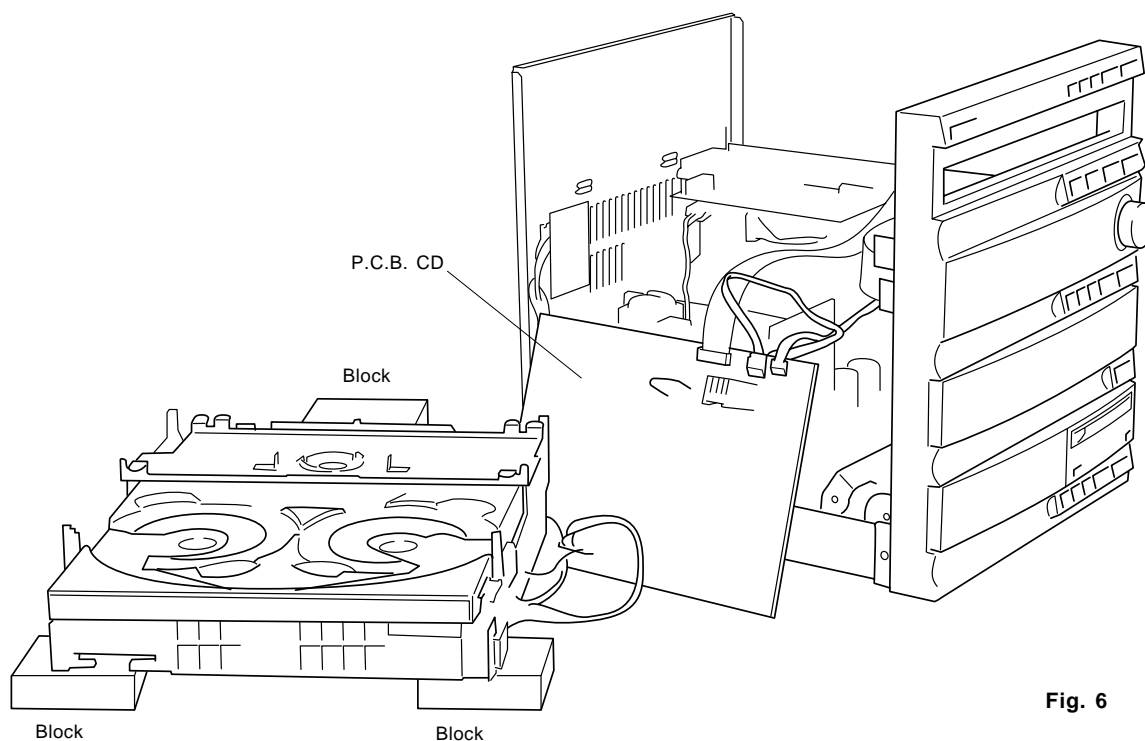


Fig. 6

8. Operation Check of P.C.B. Main (1)

- a. Remove the CD Mechanical Unit.
- b. Remove the Panel Unit.
- c. Remove the Deck Mechanical Unit.
- d. Remove the MD Mechanical Unit.
- e. Remove 5 screws (12) in Fig. 7.
- f. Remove 1 screw (13) and then remove the P.C.B. Main (2) in Fig. 8.
- g. Remove 3 screws (14) in Fig. 8.
- h. Remove 4 screws (15) and then remove the Power Transformer in Fig. 9.
- i. Place the main unit on its left side (viewed from the front) and remove the Bottom Cover in Fig. 10.
- j. Install the Panel unit to the main unit in Fig. 10.
- k. Connect the flat connecting cables (CB10 and CB13) and remove a connector (CB805) in Fig. 2.
- l. Connect the power plug and turn on the Power Switch.

CAUTION

When the power to this equipment is turned on with the CD/MD Mechanical Unit disconnected, the capacitor C255(4700/16) of the Main P.C.B. (CD/MD power supply section) is charged. Connecting the CD/MD P.C.B. in this state may cause damage to its IC. Therefore, when installing the CD/MD Mechanical Unit, be sure to discharge the capacitor C255(4700/16) of the Main P.C.B. before making connections. (To discharge it, short the W201 terminal +B and GND with a resistor(270Ω 1W).)

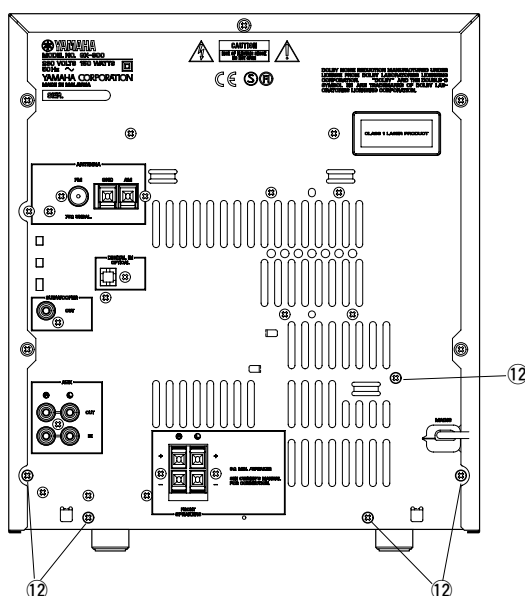


Fig. 7

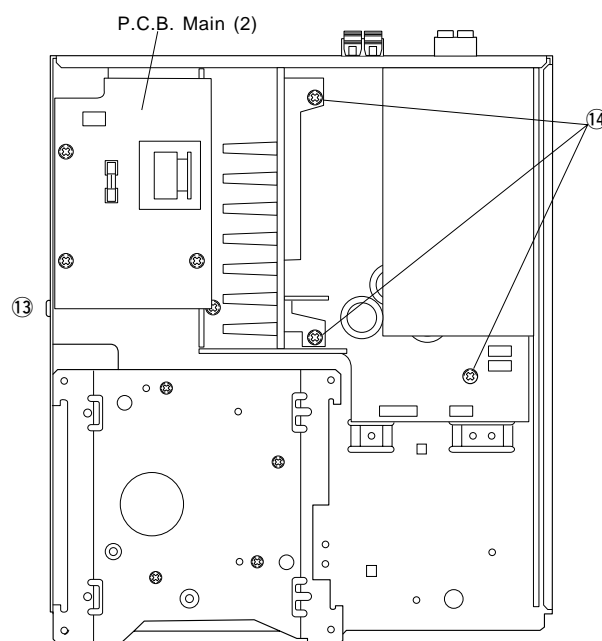


Fig. 8

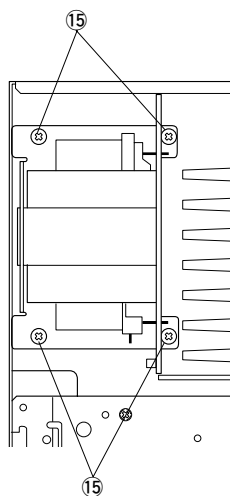
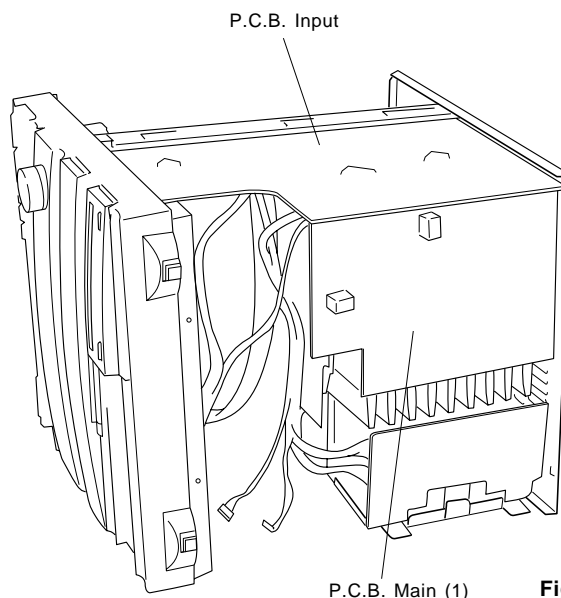


Fig. 9



P.C.B. Main (1)

Fig. 10

9. Removal of Tray & Traverse Unit

- Remove 4 screws (16) and then remove the Clamp Bracket in Fig. 11.
- Remove 2 screws (17) and then remove the Tray Brackets in Fig. 11.
- Push the Friction Arm (the bottom side of the CD Mechanical Unit) with a screwdriver or the like and pull out the Tray forward as in Fig. 11.
- Remove 4 screws (18) and take out the Slider in Fig. 12.
- Disconnect the Flat Connecting Cable (16P) and connectors (6P).
- Remove the Traverse Unit in Fig. 12.

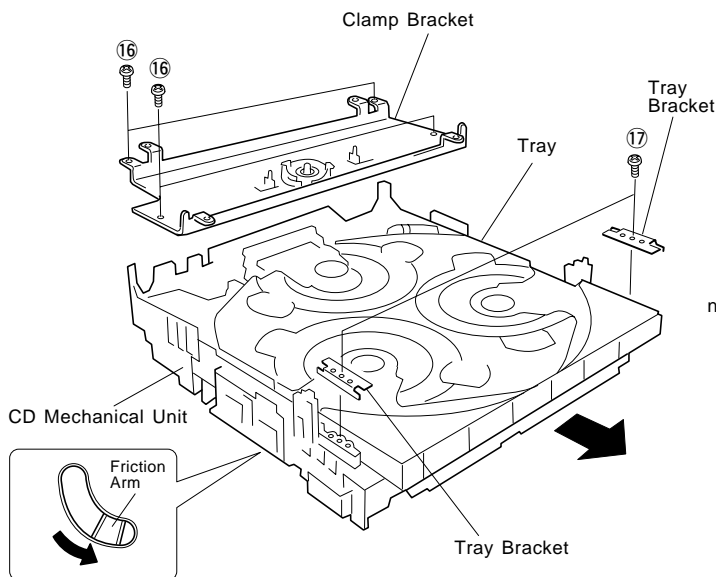


Fig. 11

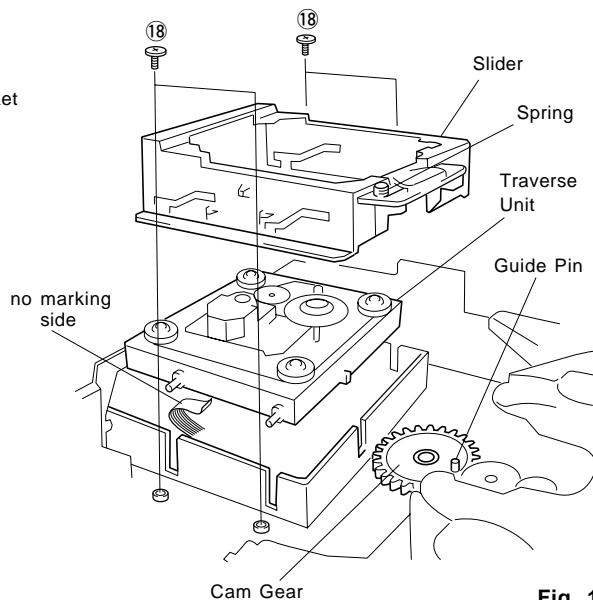


Fig. 12

● Precaution for Installation of Tray

Be sure to fit the shaft of the Friction Gear into the groove in the Tray.

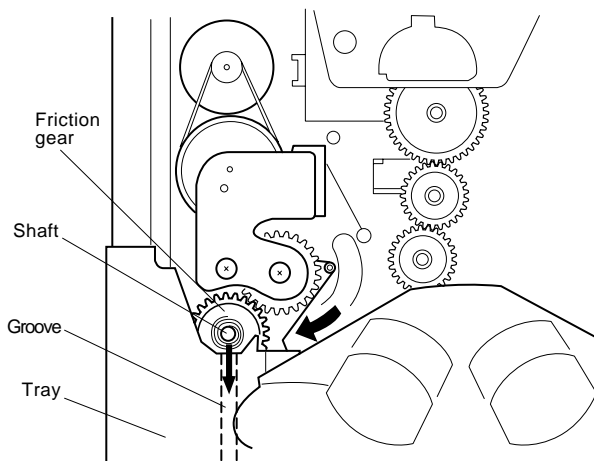


Fig. A

● Installation of Traverse Unit & Slider

- Fit the Traverse Unit into the Chassis.
- Turn the Cam Gear until its Guide Pin comes to the position as shown in Fig. 12.
- Fit the Slider into the Traverse Unit. Set the Spring of the Slider so that it holds down the Guide Pin of the Cam Gear (as shown in Fig. B). (Press the Spring of the Slider once and release it, and it will hold down the Guide Pin of the Cam Gear.)
- After installation, check that the Clamp moves up and down by turning the Load Gear.

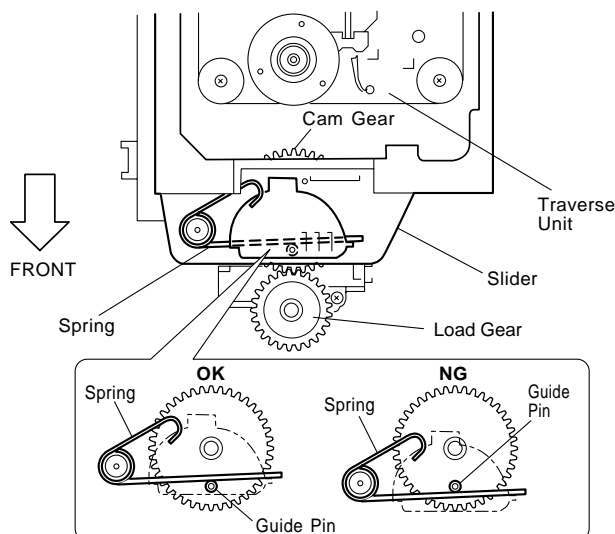


Fig. B

10. Removal of Pick-up Head

- Remove the Gear A in Fig. 13.
- Pull out the Sled Shaft and remove the Pick-up Head in Fig. 13.

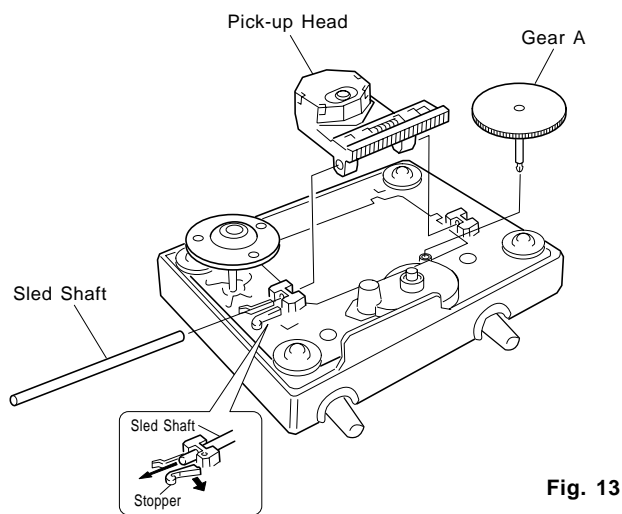


Fig. 13

- Check that the disc table height is as specified below.

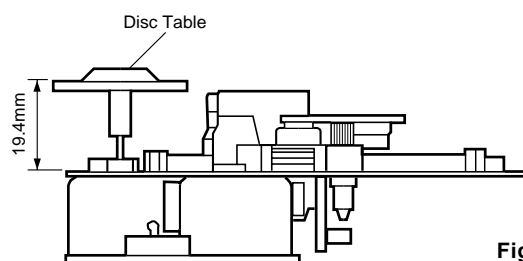


Fig. C

11. Removal of Cassette Mechanism

Remove 4 screws (19) and then pull out the Cassette Mechanism in Fig. 14.

12. Removal of Main Motor

Remove 2 screws (20) in Fig. 14.

13. Removal of Pinch Roller

Detach the hook and then remove the Pinch Roller in Fig. 15.

14. Removal of Head Ass'y

- Remove 1 screw (21) and then remove the Relay P.C.B. in Fig. 15.
 - Remove 2 screws (22) and then remove the Head Ass'y in Fig. 15.
- * Perform the adjustment of azimuth after installing the Head Ass'y.

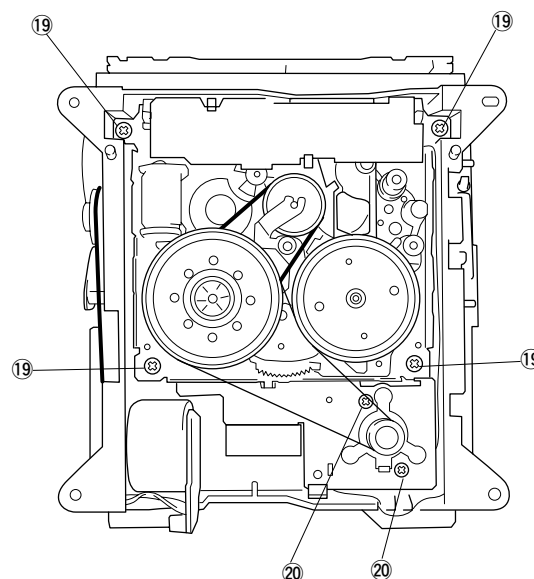


Fig. 14

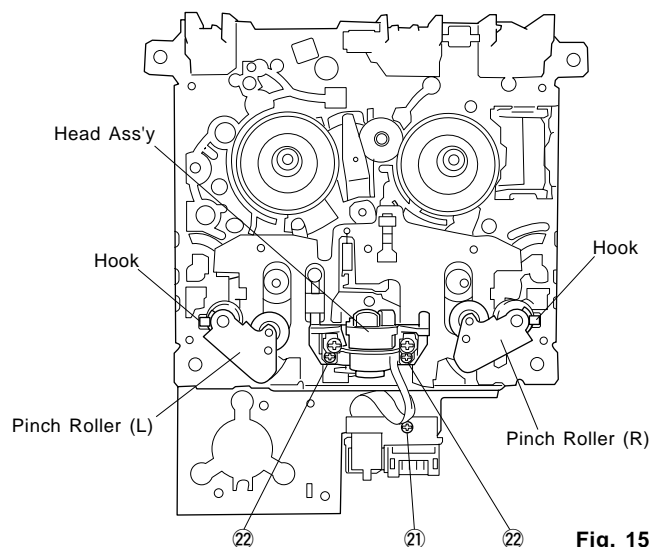


Fig. 15

Disassembly of MD Mechanism Unit

Remove the MD mechanical unit according to Steps 1 ~ 6 of the disassembly procedure (page 7).

Removal of MD Main P.C.B. (Fig. 16)

1. Remove 4 screws (Q1).
2. Remove 6 connectors (Q2).

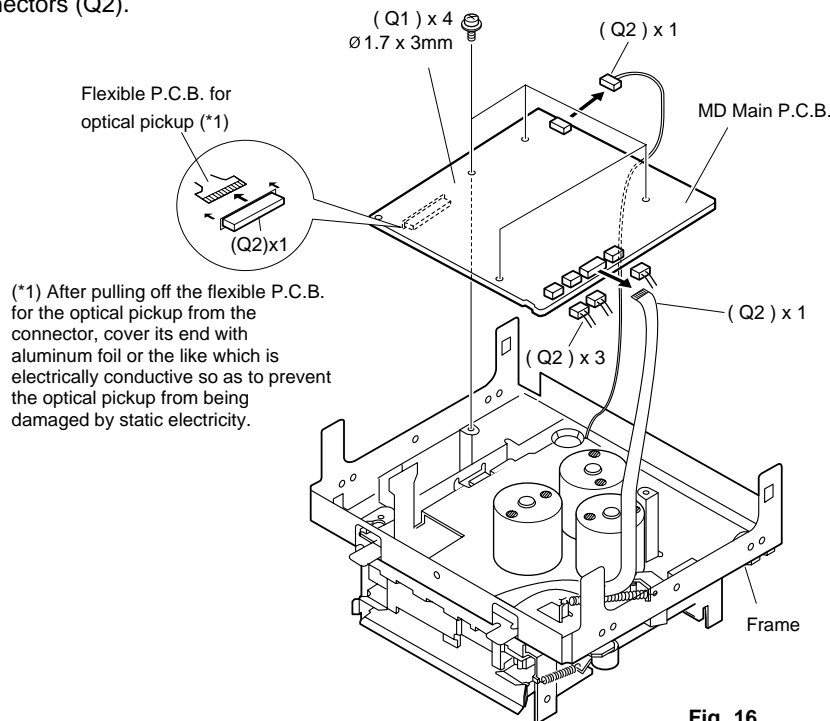


Fig. 16

Removal of MD Mechanism (Fig.17)

1. Remove 4 screws (R1).

Caution

Almost the entire surface of the cartridge holder is coated with oil. When removing the mechanism, hold it at the rear end (where marked with arrows in the figure) and avoid touching the oiled surface.

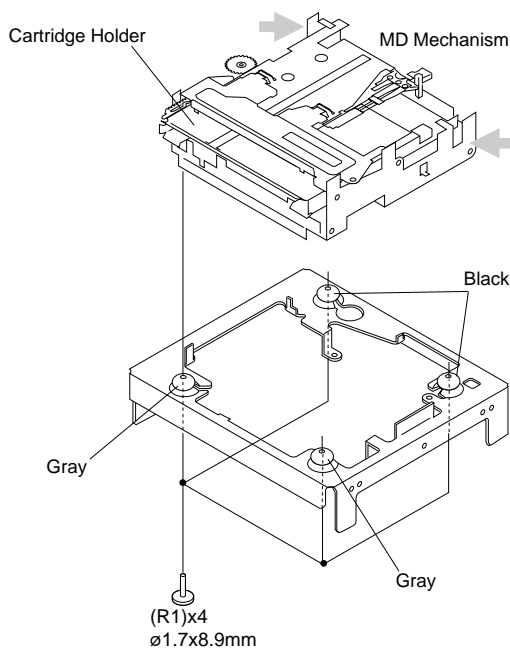


Fig. 17

Removal of Magnetic Head (Fig.18)

1. Remove a screw (A1).

Caution

- a. When removing the magnetic head, hold its base and do not touch the magnetic head itself or the leaf spring.
- b. Place the magnetic head upside down.
- c. Use special care so as not to cause any damage to the magnetic head when installing it.

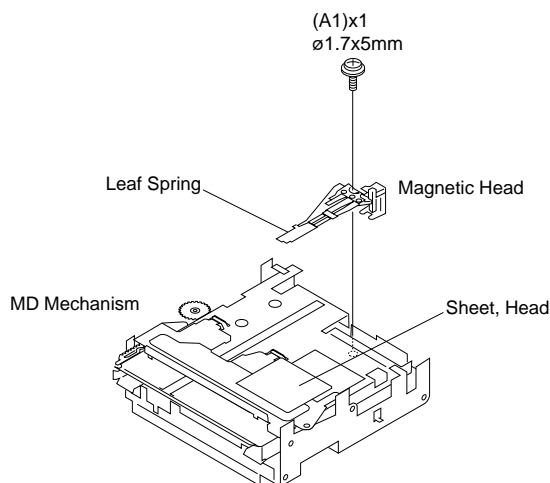


Fig. 18

Removal of Cartridge Holder (Fig.19)

1. Open the roller arm lever in the arrow direction and move the clamber lever to the rear.
2. With a +5V voltage (*2) applied to the red line side of the blue connector of the loading motor, push the rack gear in the arrow direction until the cam plate lever clicks.
3. Remove a screw (B1 and B2, 1 each) from the holder arm and remove the cartridge holder by moving it to the left.

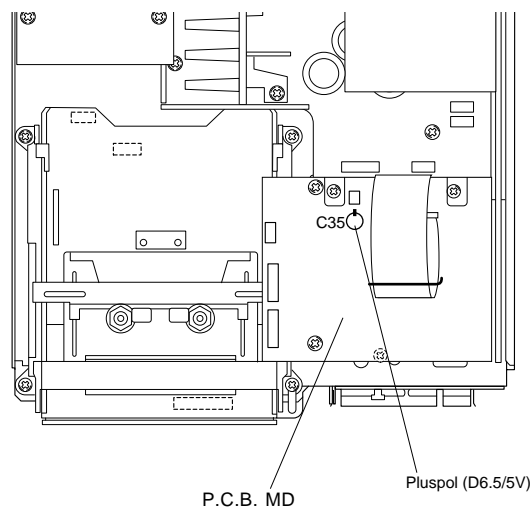
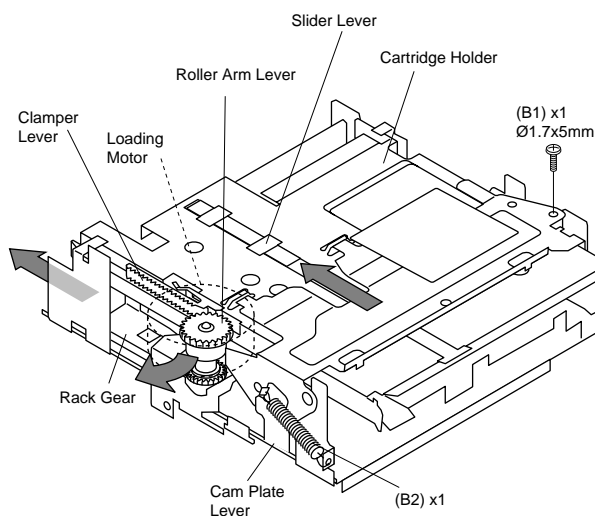


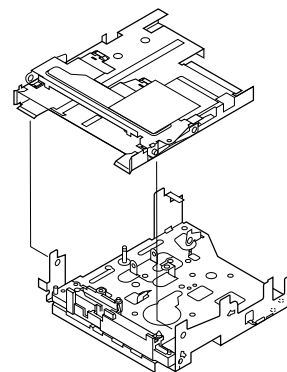
Fig.19

Caution

Be careful so that oil does not get on the clamber lever which contacts the roller of the roller arm lever.

Installation of Cartridge Holder

- To install the cartridge holder, the rack of the mechanism must be lowered toward the rear.
- While pushing the roller arm lever outward, push in the slider lever.
- Apply a +5V voltage to the loading motor (until clicking sound is heard) and push in the rack gear.
- With the slider lever and the rack gear installed as described above, fit the cartridge holder as shown in the figure and tighten screws.



Removal of Mechanism SW P.C.B. (Fig.20)

- Once the mechanism switch P.C.B. is removed, it will be necessary to perform "Adjustment of Lead-in Switch Position". (See page 34.)

1. Remove 2 screws (E1) and then remove the Mechanism SW P.C.B.

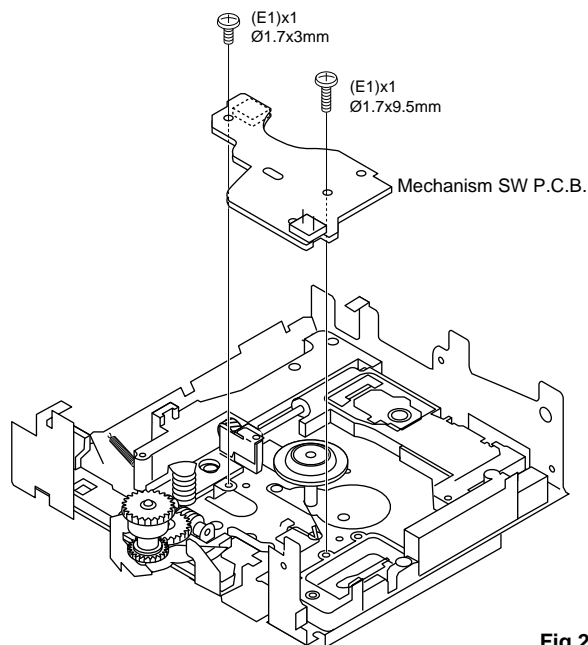
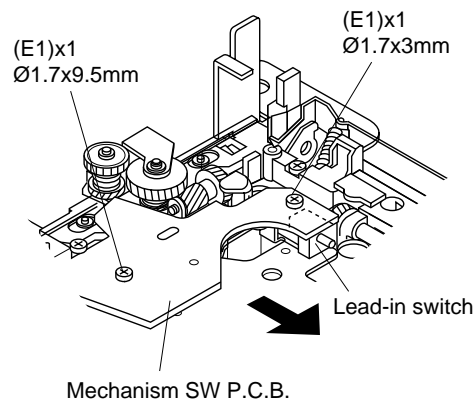


Fig.20

Installation of Mechanism SW P.C.B.

- Set the mechanism to the eject mode by applying -5V to the loading motor.
- Install the mechanism SW P.C.B. so that the boss fits in the hole in it.
- Push the lead switch on the mechanism SW P.C.B. toward the optical pickup side (so that looseness in the boss hole is eliminated).
- Tighten screws and apply thread lock.
- Measure the lead-in switch position. (See page 34.) (Enter the result in EEPROM.)



Removal of Sled Motor/Loading Motor (Fig.21)

1. Remove 4 screws (D1) and then remove the sled motor/loading motor.

Caution

Use care so as not to cause any damage to the gear.
(The damaged gear will cause abnormal noise to occur while searching.)

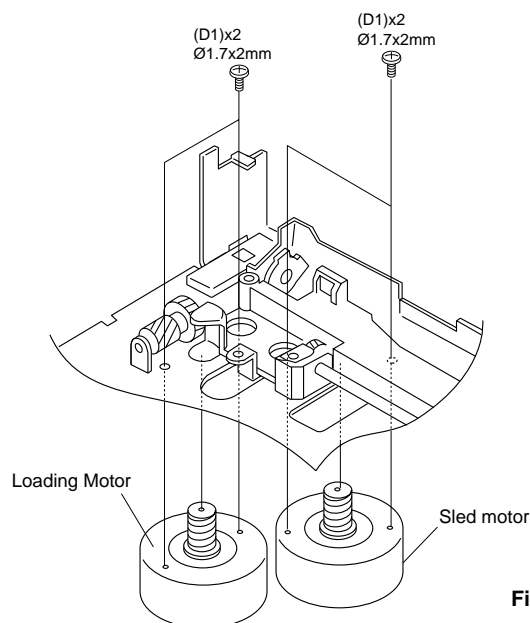


Fig. 21

Removal of Spindle Motor (Fig.22)

- Once the spindle motor is removed, it will be necessary to perform "Pickup Rating". (See page 35.)

- Remove 3 screws (C1).
- Remove the spindle motor by moving it in the arrow direction.

Caution

- Be careful not to scratch the gear.
(Scratched gear will produce noises during searching.)
- As the turn-table is magnetized, keep foreign objects from being attracted.

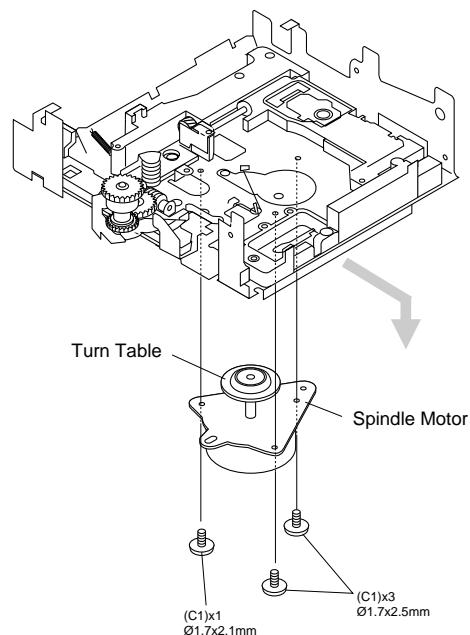


Fig.22

Removal of Optical Pickup Head (Fig.23 and Fig.24)

- Remove 3 screws (F1).

Caution

Use care so as not to cause any damage to the gear.
(The damaged gear will cause abnormal noise to occur while searching.)

- Remove a screw (F2).
The leaf spring (A) attached to the P.U. will be reused when replacing the pickup. It is not supplied with the optical pickup.
- Using tweezers or the like, pull the PU shaft from the base a little. Pull only enough to allow the pickup to come off. If it is pulled off completely, the oil on the shaft will be scraped off.

Be sure to keep oil on the shaft!

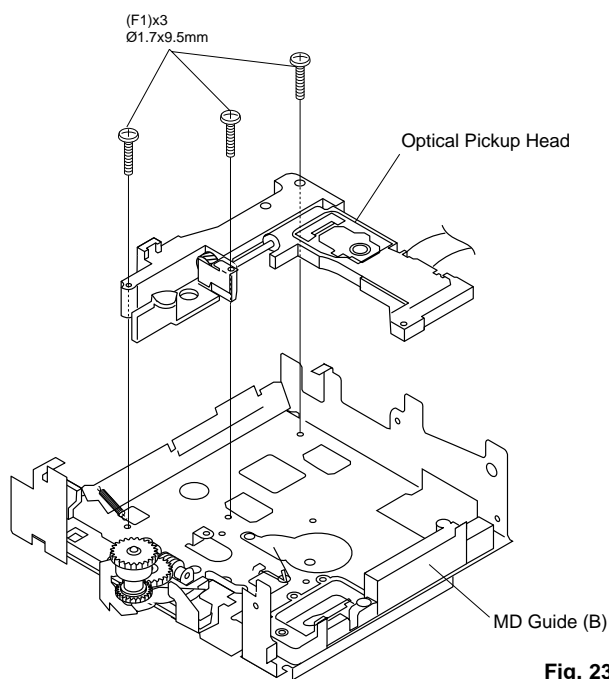


Fig. 23

Assembly of Optical Pickup

- When installing the pickup to the MD guide (A), be sure to tighten the leaf spring (A) with it.
- When installing the pickup to the MD mechanism, fit the pickup into the MD guide (B) first, match the boss of the MD guide (A) and its hole in the chassis and tighten them with a screw.

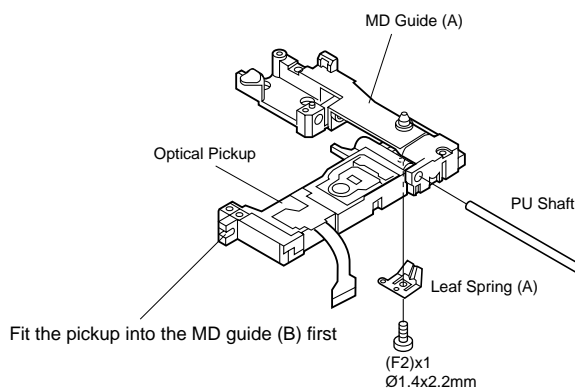


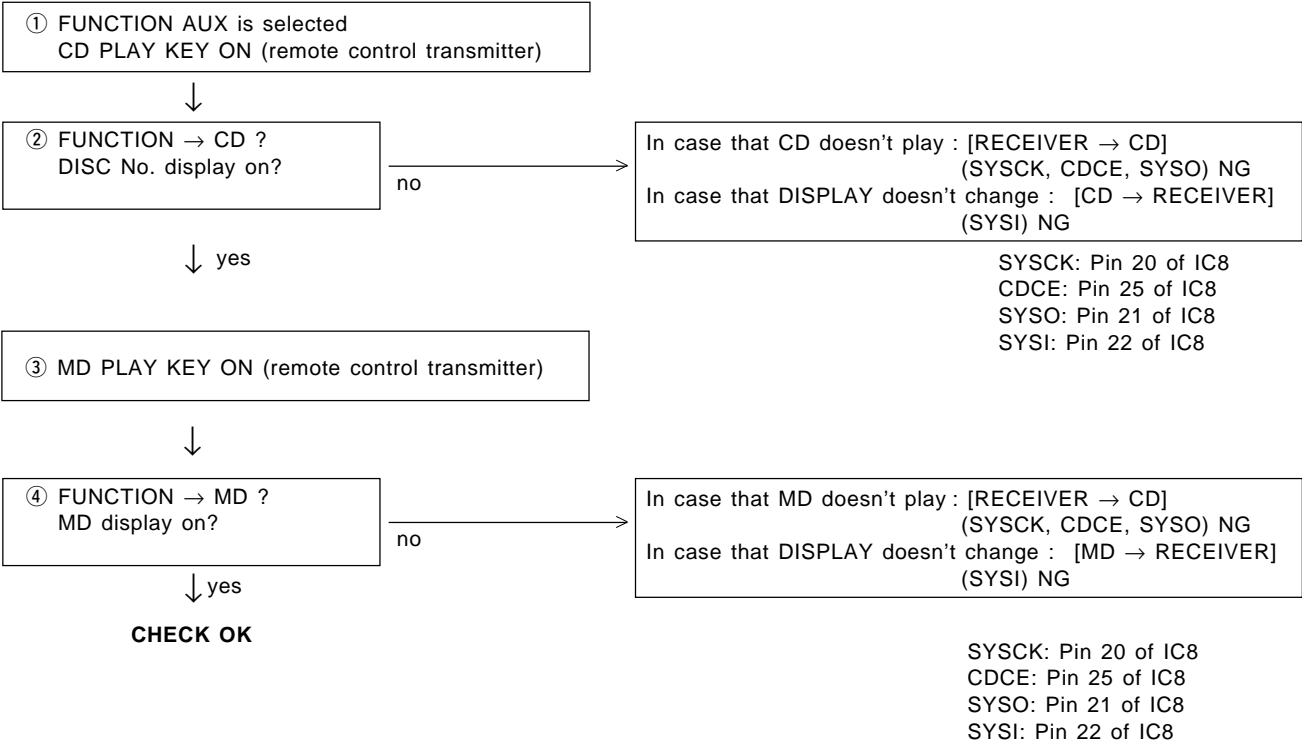
Fig. 24

VOLUME RANGE

DISPLAY	dB	DISPLAY	dB	DISPLAY	dB
VOL MIN	− ∞	VOL 10	−55	VOL 56	−9
VOL 01	−79	VOL 11	−54	VOL 57	−8
VOL 02	−73	.	1dB step	VOL 58	−7
VOL 03	−68			VOL 59	−6
VOL 04	−64			VOL 60	−5
VOL 05	−61			VOL 61	−4
VOL 06	−59			VOL 62	−3
VOL 07	−58			VOL 63	−2
VOL 08	−57	VOL 54	−11	VOL 64	−1
VOL 09	−56	VOL 55	−10	VOL MAX	0

NOTE) When VOLUME is at minimum, MUTE of AMP is on.

SYSTEM CONTROL CHECK



■ TEST MODE

To facilitate inspection, measurement and location of any faulty point, 6 types of built-in Test Mode are provided, one for each section.

- System Test Mode : Test mode for the system section. It is also used when entering the test mode for each section.
- Receiver Test Mode : Test mode for the receiver section
- Tape Test Mode : Test mode for the deck section
- CD Test Mode : Test mode for the CD section
- MD Test Mode : Test mode for the MD section
- All Function Test Mode : Test mode for all functions

■ SYSTEM TEST MODE

This test mode is used for the system section. Also, this mode must be executed first when entering the test mode for each section.

Starting Procedure

In the STANDBY mode, press the STANDBY/ON button while pressing the RANDOM button and the PLAY/PAUSE(CD) button simultaneously. Once the SYSTEM TEST MODE is set, causal factors for the previous power off appear on the FL display.

Causal factors for power off at starting

Display	Description
<Key Operate	Power off by button operation
<Off Timer	Power off by Off Timer setting
<Sleep Timer	Power off by Sleep Timer function
<Auto Off	Power off by Auto Power Off function
<I-Protect	Power off by detection of an abnormal current value
<V-Protect	Power off by detection of an abnormal voltage value
<Temp Over	Power off by detection of an abnormal temperature value
<AC Cut	Power off by AC power cut
<??	Unknown

Operation Procedure (Selection/finalizing of TEST MODE for each section)

- 1) Select the TEST MODE by the section name, pressing the ▷INPUT (up) or ◁INPUT (down) button.

Display	Description	Ref. page
<Key Operate	Causal factors for power off are displayed. (This state is available immediately after starting.)	14
Test RECEIVER	RECEIVER TEST MODE	15
Test TAPE	TAPE TEST MODE	16
Test CD	CD TEST MODE	17
Test MD	MD TEST MODE	30
Test All Func	ALL FUNCTION TEST MODE	18
Escape Test	The test mode is canceled.	—

- 2) Pressing the MUSIC button will shift the mode to the selected test mode.
For the details of the selected test mode, refer to the Ref. page in the above step 1).

■ RECEIVER TEST MODE

When RECEIVER TEST MODE is set through SYSTEM TEST MODE, "01 G.E.TEST" appears on the FL display. (01 is the test program No.)

Test programs from 01 to 25 are incorporated in RECEIVER TEST MODE.

Operation Procedure (Selection/execution of Test Program)

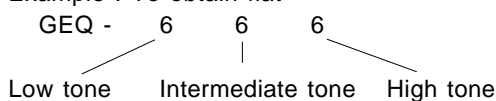
- 1) Select the test program by pressing the ▷▷TAPE (up) or ◁◁TAPE (down) button.
- 2) Pressing the STANDBY/ON button will execute the selected test program.
- 3) Repeat selection/execution of the test program as necessary.

No. & DISPLAY	FUNCTION	PURPOSE & OPERATION
01 G , E , TEST	Equalizer check mode	Used to check EQ. Pressing the STANDBY/ON button will set the Equalizer Test mode. For the details, refer to page 20.
02 FL + CLEAR	FL display full lighting, RAM CLEAR	Used for lighting of all display segments and clearing of RAM. (Note that the user memory will be cleared.) At the first pressing of the STANDBY/ON button, all display segments light up and at the second pressing, MEMORY and M-CLEAR light up for 2 seconds and RAM of CPU is initialized. (The product mode is restored.) (Presetting of the tuner becomes the manufacturer preset state.)
03 FL FULL	FL display full lighting	Used to check lighting of all display segments. At the first pressing of the STANDBY/ON button, all display segments light up and at the second pressing, this mode is canceled. (The product mode is restored.)
04 APO - ON/OFF 05 RDS - OFF/ON 06 A , PS - ON/OFF 07 A , M , - RDS/ALL 08 CT > C - ON/OFF 09 L > CT - ON/OFF 10 PSR2 - ON/OFF 11 RTBL - ON/OFF 12 SEC - OFF/ON 13 Temp 14 PEAK - ON/OFF 15 AMPC - OFF/ON 16 CDCH - ON/OFF 17 REM CODE 18 L , EN - ON/OFF 19 ALL CH > 20 RDS E / F 21 SUR TEST 22 KEYC - OFF/ON 23 AM - IF	Do not use No. 04 to 23 functions as they are not for servicing.	
24 CANCEL	Used to cancel the test program. (The product mode is restored when the STANDBY/ON button is pressed.)	
25 DEST	Destination display mode	

Equalizer test mode (Test program No. 01)

When the equalizer test mode is set, "GEQ - xxx" is displayed. "xxx" represents the 3 band value of GEQ. It is possible to set the GEQ value directly, using the buttons on the remote control unit.

Example : To obtain flat



Displayed value	0	1	2	3	4	5	6	7	8	9	A	B	C
Gain (dB)	-12	-10	-8	-6	-4	-2	0	+2	+4	+6	+8	+10	+12

Operation Procedure

- To set a value for each band
[0] to [9], [A(TIME)], [B(PROG)], [C(R.TIME)]
- To set all bands to Min (-12dB)
[D(EDIT)]
- To set all bands to Max (+12dB)
[E(+10)]
- To cancel this test mode, press the STANDBY/ON button. (The production mode will be restored.)

● MAKER'S PRESET

BAND	MARKETS	PRESET No.							
		1	2	3	4	5	6	7	8
FM (MHz)	U, C, R, T (100k/10k)	98.1	95.1	87.5	101.5	107.9	88.1	106.1	107.9
	A, B, G, L, R, T (50k/9k)	98.10	95.10	87.50	101.50	108.00	88.10	106.10	107.90
AM (kHz)	U, C, R, T (100k/10k)	630	1080	1400	530	1710	900	1350	1440
	A, B, G, L, R, T (50k/9k)	630	1080	1404	531	1611	900	1350	1440

NOTE 1) PRESET PAGE A : FM B : AM C : FM D : AM E : FM

CAUTION : When executing Test program No. 2 RAM CLEAR, be sure to write down the preset memory contents of the tuner, using a table like the one shown below. Execution of RAM CLEAR will set the memory contents of the tuner back in the factory preset state which means that all the memories preset by the user will be erased.

Preset group	P1	P2	P3	P4	P5	P6	P7	P8
A								
B								
C								
D								
E								

■ TAPE TEST MODE

When TAPE TEST MODE is set through SYSTEM TEST MODE, "Tape Test XXXX" appears on the FL display. (XXXX is the counter value.)

The operation condition of the deck section will be as follows.

- When the reverse mode is set to "endless", the number of playback repetition becomes unlimited. (It is set to "8 " times in the product mode.)
- When in the REC mode, AUX is used automatically for the input source.

■ CD TEST MODE

When CD TEST MODE is set through SYSTEM TEST MODE, "00STM100: 00" appears on the FL display.

The CD TEST MODE is enabled. Each button operates as follows for each mode. The MODE No. is increased by pushing "+10" button.

Button	MODE 1	MODE 2	MODE 3
" 0 "	Open/close the tray	Focus search	Cancel adjust pass *2
" 1 "	Clamp up/down	Play (PLL)	Auto adjustment mode 1 *1 Tracking Offset, Focus Offset, Focus Gain
" 2 "	DISC change	Play (without PLL)	Auto adjustment mode 2 *1 Tracking Balance, Tracking Gain
" 3 "	Mechanism home process	Focus on, Tracking off, Feed off	Auto adjustment mode 3 *1 Focus Gain, Tracking Gain, Focus Balance
" 4 "	Jump to test mode 4	+10 track kick	Read and display the servo coefficient
" 5 "	Tray close, Clamp down	-10 track kick	Displayed servo coefficient address up
" 6 "	—	+1 track kick	Displayed servo coefficient address down
" 7 "	Enter normal operation (without mecha. INIT.)	-1 track kick	Displayed servo coefficient increment
" 8 "	Enter normal operation	+30 track kick	Displayed servo coefficient decrement
" 9 "	Start TEST REPEAT (Do not use this function as it is not for servicing.)	-30 track kick	Send the displayed servo coefficient *2

Button	MODE 4	MODE 5
" 0 "	Feed forward (outer direction)	—
" 1 "	Feed backward (inner direction)	—
" 2 "	Rotate the disc motor	—
" 3 "	Retard the disc motor	—
" 4 "	port TBLL ← Low, port TBLR ← High	—
" 5 "	port TSLW High/Low alternate	—
" 6 "	Tray port control (open/close)	—
" 7 "	Line mute on/off	—
" 8 "	—	—
" 9 "	Jump to Test mode 1	—

*1 "Adj-" lights during the adjustment and disappears at the end of the adjustment.

*2 When the mode is reset to the Production Mode after the servo coefficients are renewed by this operation, auto adjustment is not available unless the auto adjustment pass function is cancelled.

The following button functions are not changed in the test mode No.

OPEN/CLOSE	Open/close the tray
DISC CHANGE	Clamp up/down
<input type="checkbox"/> (STOP)	Controls for the tray, the disc table and clamping stop. STANDBY command for the servo system.
<input type="checkbox"/> / <input type="checkbox"/> (PLAY/PAUSE)	Play (PLL)
<input type="checkbox"/>	Feed forward (outer direction)
<input type="checkbox"/>	Feed backward (inner direction)
DISC 1	Tray close, clamper down

■ ALL FUNCTION TEST MODE

When ALL FUNCTION TEST MODE is set through SYSTEM TEST MODE, "AUX Digital" appears on the FL display.

The operation condition in this mode will be as follows.

- AUX is used as the input source of the receiver section.
- When a CD is loaded, Full Repeat Play is executed automatically for it.
- When a cassette tape is loaded, Endless Rec Play is executed by the cassette deck automatically.
- When a MD is loaded, Endless Rec Play is executed by the MD deck automatically.

■ CD ERROR MESSAGES

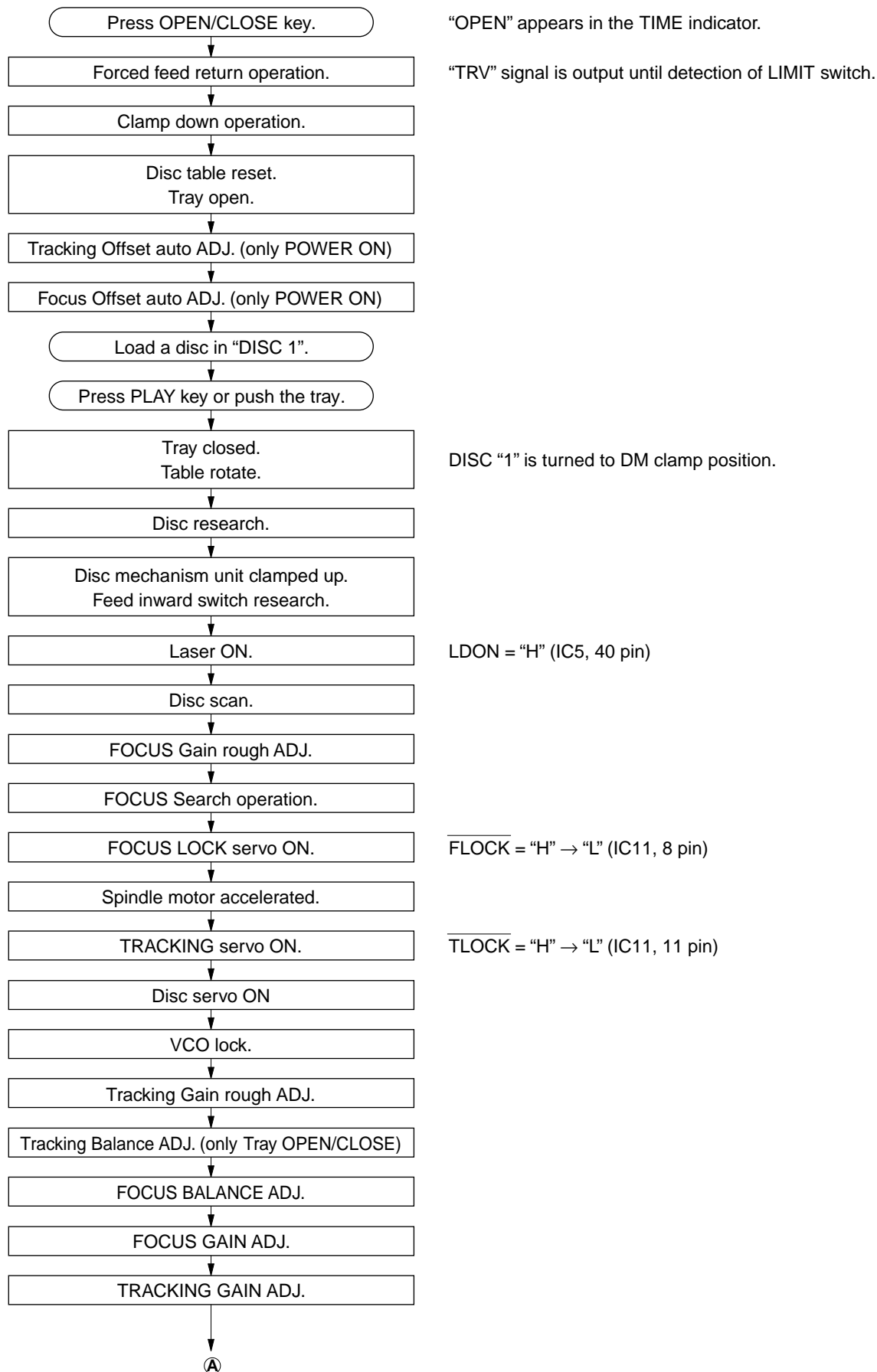
Error message can be obtained on the display by pushing STOP and TIME buttons simultaneously when CD has stopped (sometimes with the tray open) by an error.

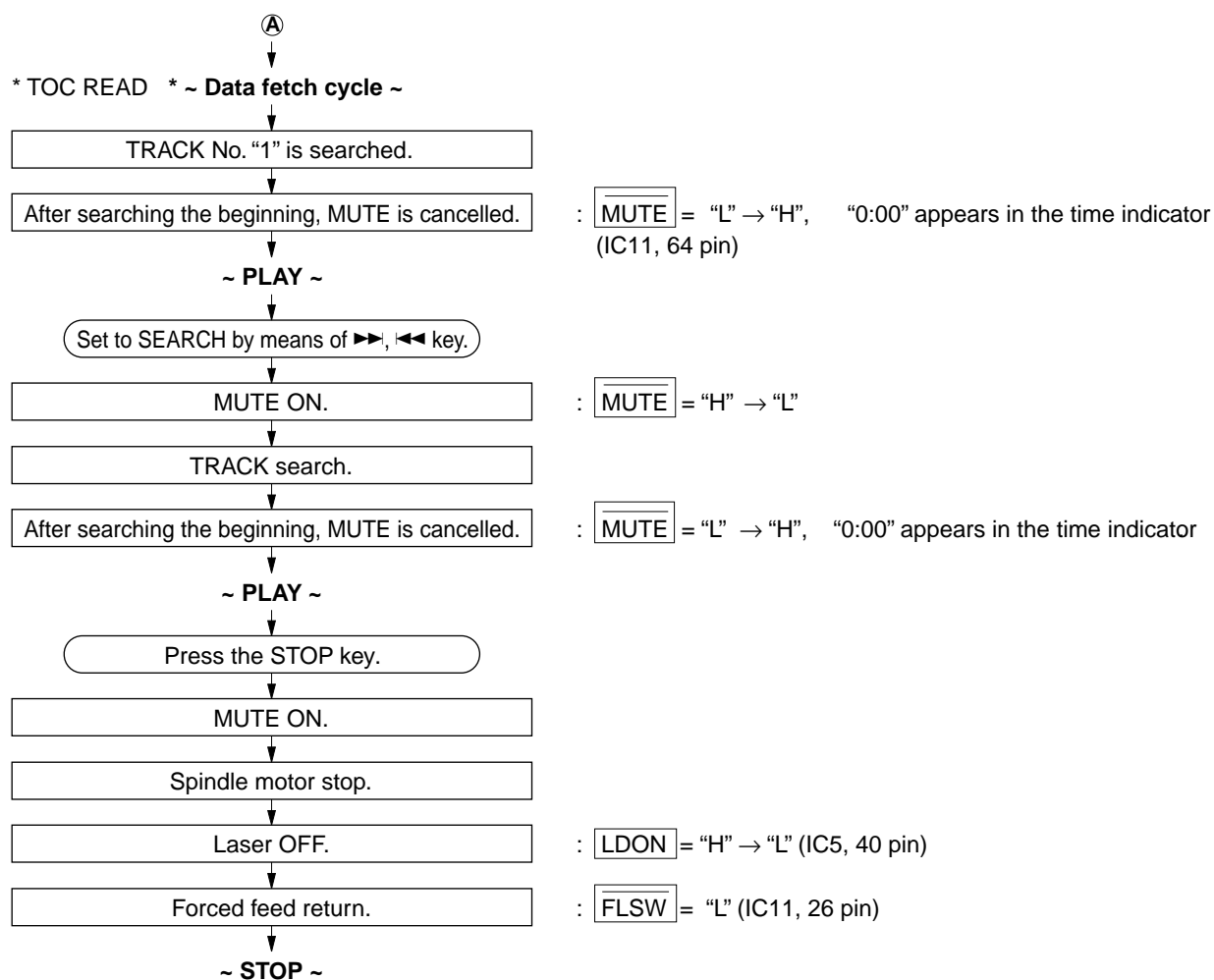
INDICATION	STATE	CONTENTS OF ERROR
E-10	PLAY	CD fails in the disc data reading after the state shift.
E-20	SCAN	
E-30	PAUSE	
E-70	SEARCH	
E-11	PLAY	CD fails in the disc data reading.
E-21	SCAN	
E-31	PAUSE	
E-73	SEARCH	CD fails in the TOC data reading.
E-04	LOAD, SEARCH	Tracking servo is not effective at the disc motor servo PLL.
E-14	LOAD, SEARCH	Disc motor servo PLL is not effective.
E-35		CD fails in focus search.
E-06	SEARCH, PLAY, PAUSE	CD fails in escaping from the lead-in area.
E-47	SEARCH	The inner limit switch does not operate at the feed inner control.
E-57	STOP	
E-77	LOAD, EJECT, CHANGE	
E-18	PLAY	CD fails in recovery from the focus out.
E-28	SCAN	
E-38	PAUSE	
E-48	SEARCH	
E-68	LOAD, DISC CHANGE	
E-AA		Clamp down switch does not operate at the clamp down control.
E-AB		Clamp up switch does not operate at the clamp up control.
E-AC		Close switch does not operate at the tray close control.
E-AD		Open switch does not operate at the tray open control.
E-AE		CD fails in the table control.
E-AF		CD fails in the mecha. home process.
MN ERR		MN662741 does not give response of SENSE with resetting by the units microcomputer.

When "MECHA ER" message appears on the display;

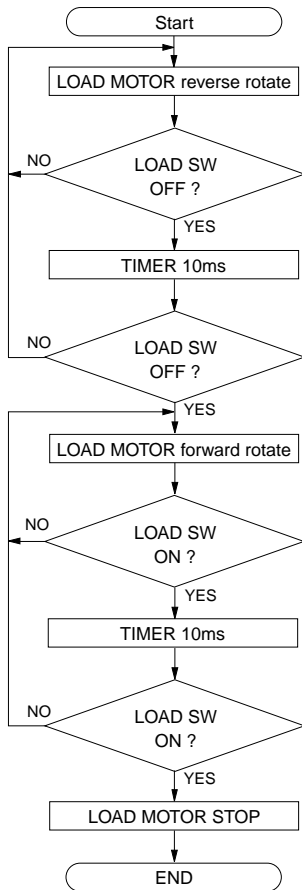
Possible symptoms are, the clamp does not move up or down, the table does not turn, mecha. sensor switch malfunctions, etc. The normal operation may be restored by tuning off the power once and then on again. If it does not work in this way, disassemble the CD mechanical unit and investigate the cause of the failure.

■ CD STANDARD OPERATION CHART

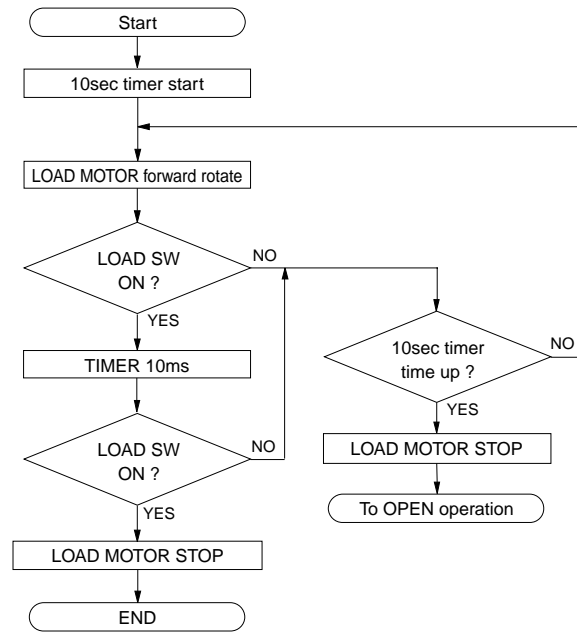




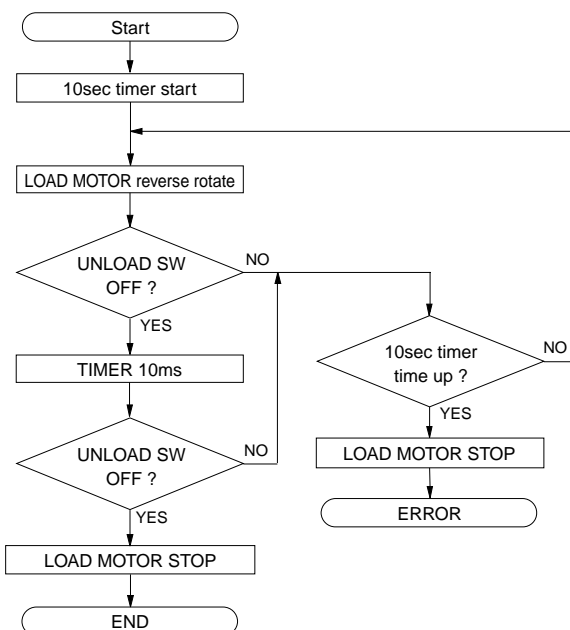
● HOME operation



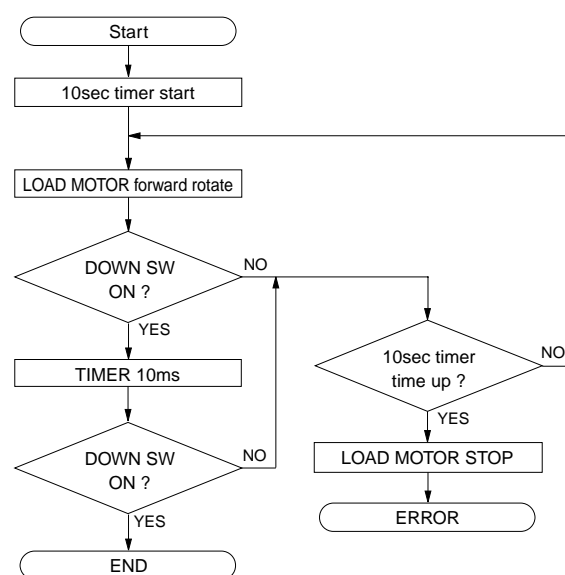
● CLOSE operation



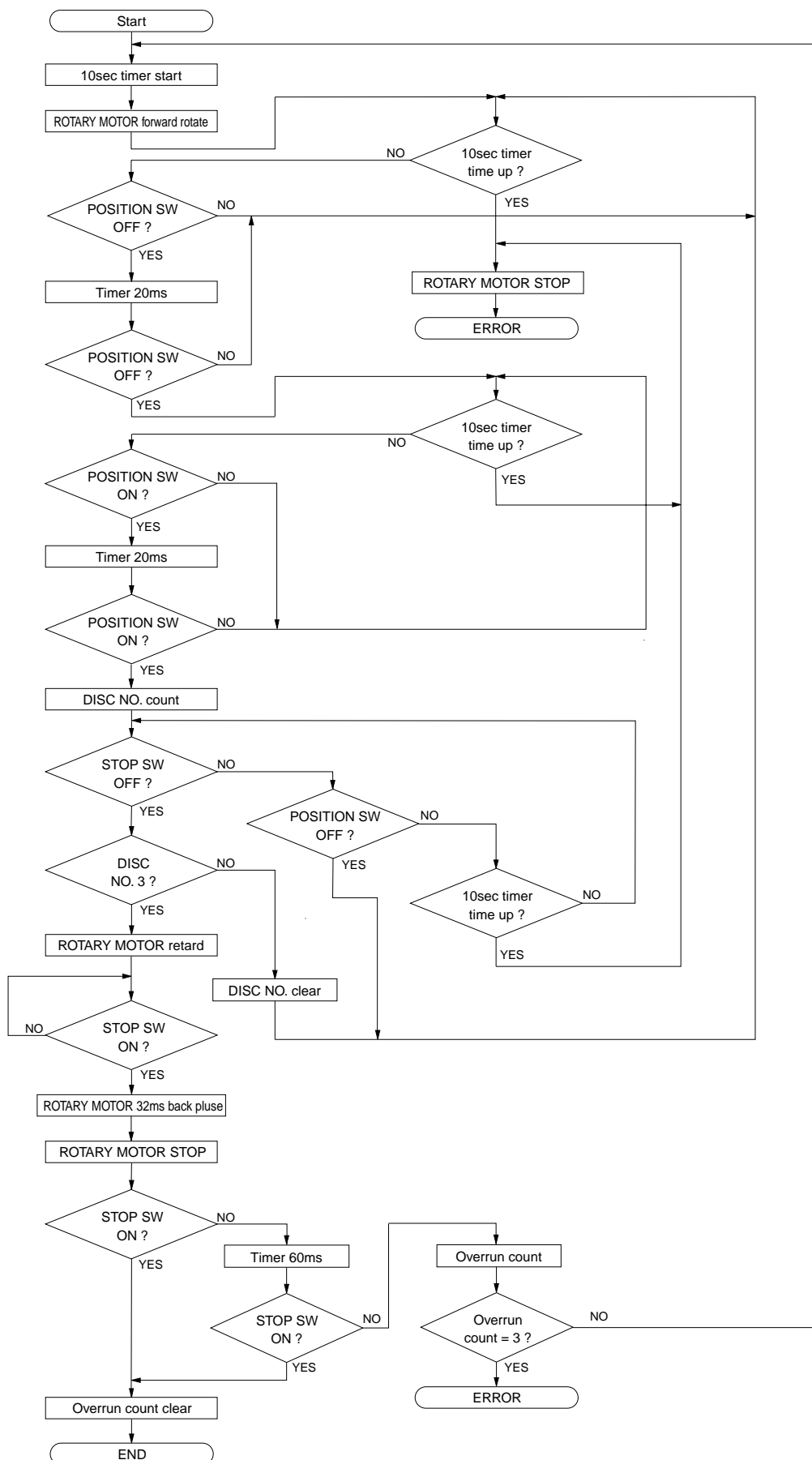
● OPEN operation



● DOWN operation



● ROTARY TRAY initialization operation



■ TAPE ADJUSTMENTS

1. Before adjustment

- Since head magnetization, dust accumulations, etc. are likely to introduce error in the various characteristics, it is very important that the heads are properly demagnetized and cleaned.
- Make adjustments of mechanical system, playback system and recording system in that order.
- Except for azimuth adjustment, adjust in the forward direction.
- Adjust at TAPE TEST MODE.

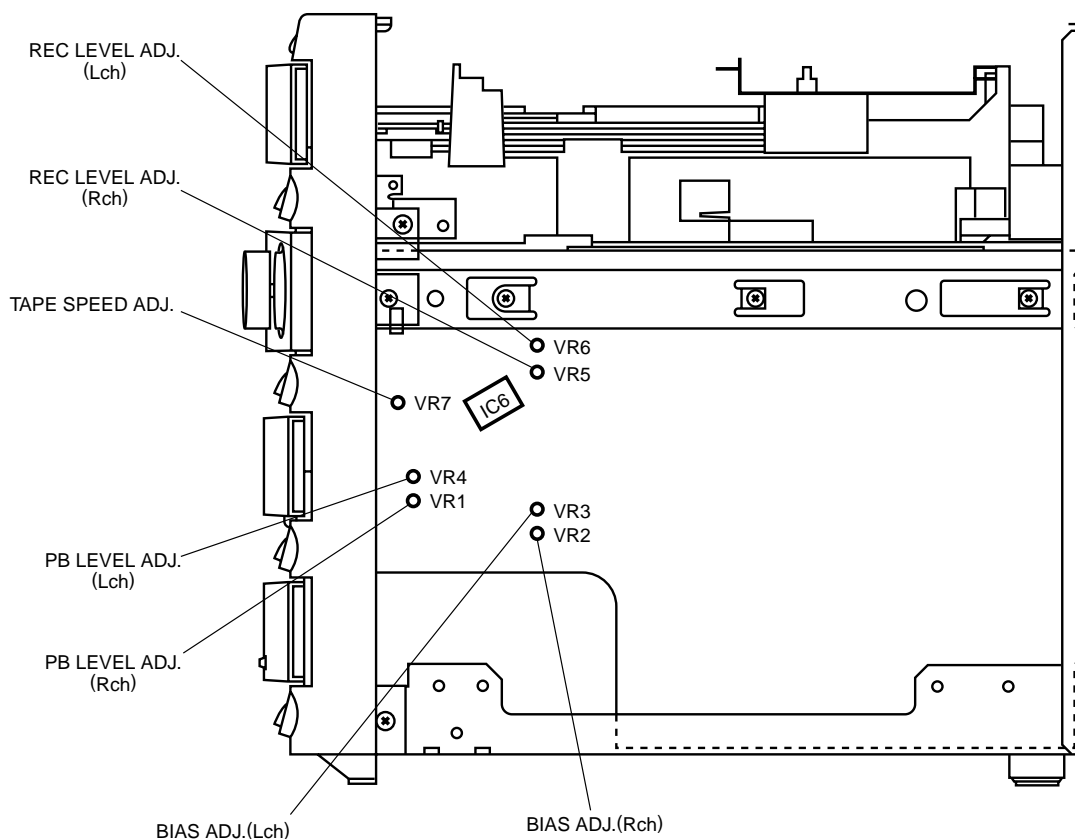
2. Instruments required

- Audio frequency oscillator
- ACVM or dual channel (ACVM)
- DCVM
- Wow/flutter meter
- Oscilloscope
- Frequency counter
- Torque meter
- TW-2111A (TX911580) ... Take up/back tension (FWD)
- TW-2121A (TX911570) Take up/back tension (RVS)
- CT-160L (TX911120) FF/REW

3. Test tape required

- MTT-111N (TX911650) Normal speed
- MTT-114N (TX911680) Azimuth
- MTT-212N (TX911660) Playback level
- MTT-256 (TX911300) Playback frequency response (Normal)
- MTT-356 (TX911310) Playback frequency response (CrO₂)
- Reference tape
 - Type I/Normal (LH) TDK AC225 (VU167200)
 - Type II/High (CrO₂) TDK AC514 (VU167300)

● Test point



“MECHANICAL ADJUSTMENT”

Step	Item to be Adjusted	Tape	Instrument required	Mode	Adjustment part	Rating	Remarks
1	Check each torque	CT-160L (FF, REW)	Torque meter	FF REW		FF, REW torque : within 70 ~ 160g/cm.	
		TW-2111A (FWD)		PLAY		Take up torque : 30 ~ 70g/cm.	
		TW-2121A (RVS)				Back tension : 1.5 ~ 6g/cm.	
2	Check FF, REW take up time	AC-514 (C-60)		FF REW		80 to 120 seconds.	
3	Azimuth	MTT-114N 10kHz, -10dB	ACVM Oscilloscope	PLAY	Azimuth adjustment screw. (Fig. A)	Playback output of L and R is maximum and phase difference should be minimum both directions. (Fig. B)	After the adjustment make sure to apply screw lock paint.
4	Tape Speed	MTT-111N 3kHz, -10dB	Frequency counter	PLAY	VR7	3000Hz \pm 15Hz	Perform adjustment at the center of the test tape, if possible.
5	Wow/Flutter	MTT-111N 3kHz, -10dB	Wow/flutter meter	PLAY		Less than 0.19% (WRMS)	Confirm at center of the test tape, if possible.

Azimuth adjustment screw. (FORWARD)

Azimuth adjustment screw. (REVERSE)

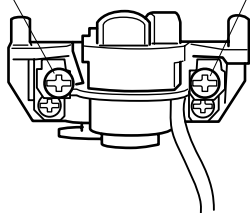


Fig. A

Rec out L : ch 1
Rec out R : ch 2
DC input, X-Y (Resurge) mode

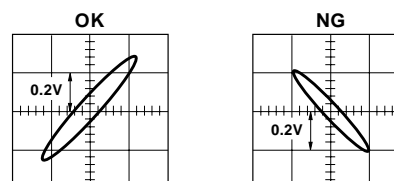


Fig. B

“ELECTRICAL ADJUSTMENT”

- Use 560 mV (250 nwb/m) for 0 dB as the standard level of the unit.
0dB = 250 nwb/m (315 Hz) = - 7 dBV (Rec out level)

< Playback section >

Step	Item to be Adjusted	Tape	Instrument required	Mode	Points of measurement	Adjustment parts	Rating
1	Playback level (315Hz)	MTT-212N 315Hz, 250nwb/m	ACVM	PLAY	REC OUT	VR4 (L ch) VR1 (R ch)	- 7 dBV \pm 0.3 dBV
2	Confirmation of playback frequency response	Test tape for frequency check. 3180 μ s + 120 μ s (LH) (MTT-256) 3180 μ s + 70 μ s (CrO ₂) (MTT-356)	ACVM Oscilloscope	PLAY	REC OUT		Check that the 10kHz playback level is within 0 \pm 3 dB of the 1kHz playback level. (Fig. C)

● PLAYBACK FREQUENCY RESPONSE

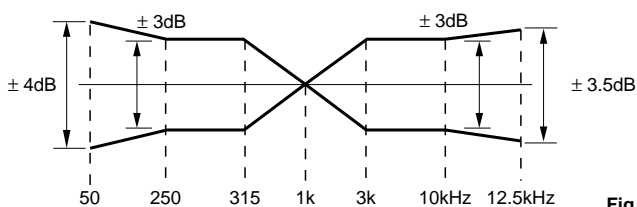


Fig. C

< Recording section >

Step	Item to be Adjusted	Tape	Instrument required	Mode	Measurement conditions	Points of measurement	Adjustment parts	Rating
1	Recording level	AC-514 High (CrO ₂)	ACVM Audio frequency oscillator	REC PLAY	Input 1 kHz Signal to AUX IN from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of REC OUT becomes – 27 dBV.	REC OUT	VR6 (L ch) VR5 (R ch)	Adjust for equal record and playback levels. (– 27 dBV ± 0.3 dBV)
2	Recording bias (Total frequency response)	AC-514 High (CrO ₂)	ACVM Audio frequency oscillator	REC PLAY	Input 12.5 kHz Signal to AUX IN from Audio Frequency Oscillator. Adjust output level of Audio Frequency Oscillator so that the voltage of REC OUT becomes – 27 dBV.	REC OUT	VR3 (L ch) VR2 (R ch)	Adjust for equal record and playback levels. (– 27 dBV ± 0.3 dBV)
		AC-225 Normal (LH)						Adjust for equal record and playback levels. (Fig. D) Perform record bias adjustment of High (CrO ₂) tape again, if the rating was not satisfied.
3	Confirmation of recorded level	AC-514 High (CrO ₂)	ACVM Audio frequency oscillator	REC PLAY		REC OUT		Confirm recorded level rating as in step 1 When recorded level rating is improper, go back to step 1 and also carry out adjustments in step 2 again.

● TOTAL FREQUENCY RESPONSE (– 27 dBV)

Dolby NR B & OFF
Type I (Normal)/Type II (High)

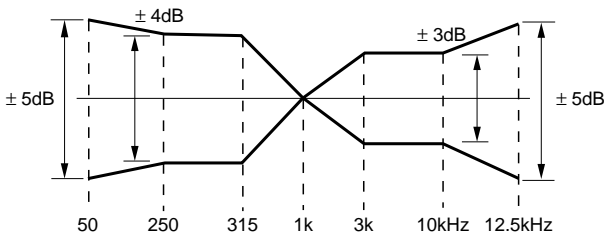


Fig. D

■ MD TEST MODE & ADJUSTMENT

Preparation before Adjustment

● Test disc

Type	Test disc
High reflecting disc	TDYS1 (SONY) [for reproduction] (P/No. TX945850)
Low reflecting disc	Commercially available mini disc for recording
Low reflecting disc	MMD-318 [for pre-adjustment] (P/No. AAX04890)

● Extension cable (see connection diagram on page 35.)

Type	Part No.
1. Extension P.C.B. for servicing	TX946230
2. 2-pin extension connector for servicing	TX946200
3. 6-pin extension connector for servicing	TX946210
4. 5-pin flat cable for servicing	TX946190
5. 28-pin flat cable for servicing	TX946220

MD TEST MODE

1. How to set to the test mode

- 1) In the STANDBY mode, press the STANDBY/ON button while pressing the RANDOM button and the PLAY/PAUSE(CD) button.

"<Key Operate" on display SYSTEM TEST MODE

- 2) Select the MD TEST MODE by the section name, pressing the ▷INPUT (up) or <INPUT (down) button.
- 3) Pressing the MUSIC button will shift the mode to the MD test mode.

Version of microprocessor on display (about 1 second)

t s m 1 3 0 1 e 0 2

Version of EEPROM protect data (from 01)
Version of microprocessor ROM (from 01)

"EJECT" on display

- 4) Load either a disc for reproduction or a disc for recording.

"AUT YOBI" on display

This completes setting to the test mode.

2. How to set to each mode

Every time the ▷▷(MD) button is pressed, the mode changes. (For operation of each mode, refer to the section describing each mode.)

->AUTO pre-adjustment -> AUTO adjustment -> RESULT preparation -> RESULT -> MANUAL pre-adjustment -> MANUAL adjustment -> EEPROM setting

Caution) The AUTO pre-adjustment and AUTO adjustment modes are used for adjustment during servicing. Other modes are used when checking the specific measured values and adjusted values or when changing the set value and the adjusted value. Note that use of other modes will rewrite RAM and EEPROM.

3. How to cancel test mode

- 1) Finish the AUTO pre-adjustment and AUTO adjustment. ("COMPLETE" appears on the display)
- 2) Press the □(MD) button. ("TEST END" appears on the display)
- 3) Eject the disc by pressing the EJECT button.
- 4) Turn off the power.

- When using a new combination of a mechanical pickup and an MD P.C.B. after a repair or for some other reason, make sure to set to the TEST mode and perform AUTO pre-adjustment and AUTO adjustment according to the following procedure.

- 1) Set to the TEST mode and perform AUTO pre-adjustment and AUTO adjustment.
- 2) Cancel the TEST mode by pressing the □(MD) button. (Writing into EEPROM starts from here.)
- 3) Eject the disc by pressing the EJECT button.
- 4) Turn off the power.

Description of TEST modes

1. AUTO pre-adjustment mode [_AUT _YOB I _]	Automatic pre-adjustment is performed. (Grating adjustment mode after this adjustment.) Adjusted values are output by using the interface.
2. AUTO adjustment mode [AUTO _AJST _]	Automatic adjustment is performed. Adjusted values are output by using the interface. Continuous reproduction is performed. (Error rate on display, jump test)
3. RESULT preparation mode [_RST _YOB I _]	Not used (Do not use this function as it is not for servicing)
4. RESULT mode (main adjustment) [_RESULT _ _ _]	Not used (Do not use this function as it is not for servicing)
5. MANUAL pre-adjustment mode [_MNU _YOB I _]	Not used (Do not use this function as it is not for servicing)
6. MANUAL adjustment mode [_MNU _AJST _]	Not used (Do not use this function as it is not for servicing)
7. EEPROM setting mode [EEPROM _SET]	Various factors of the digital servo function are changed manually. Each servo function is turned on independently. The voltage is measured at the temperature detect terminal and the standard value is set.
8. TEST-PLAY mode [TEST _PLAY _]	Continuous reproduction from the specified address is performed. C1 error rate is measured and ADIP error rate is measured.
9. TEST-REC mode [TEST _REC _ _]	Continuous recording from the specified address is performed.
10. INNER mode [_ _ INNER _ _ _]	The position where the INNER switch is turned ON is measured.
11. EJECT mode [_ _ EJECT _ _ _]	To TEMP setting (of EEPROM setting) To CONTROL setting (of EEPROM setting) Laser power setting (record/reproduction power) is performed.

1. AUTO pre-adjustment mode Low reflecting disc (MMD-318) only

Step	Setting method	Remark	Display
1	Set the Test mode to STOP.	No disc is loaded.	[EJECT]
2	Load a disc.	Auto pre-adjustment menu	[LOADING] [_AUT _YOB I _]
3	Press the REC/PAUSE(MD) button once. Grating adjustment is performed and adjusted values are output. Adjustment is completed.	Auto pre-adjustment is started after sliding to the innermost track. “ *** ” changes in the following order during automatic adjustment. HAo -> RFg -> SAg -> SBg -> PTG -> PCH -> GTG -> GCH -> RCG -> SEG -> RFG -> SAG -> HAO -> HEO -> TCO -> LAO Proceed to Step 4 when adjustment is OK. Proceed to Step 5 when adjustment is NG.	[*** : _ _ _ _ _] [_ COMPLETE _] [Can't _ ADJ.]
4	When adjustment is OK, press the CHARACTER button.	The display returns to the AUTO pre-adjustment menu.	[_AUT _YOB I _]
5	When adjustment is NG, press the CHARACTER button.	There is an abnormality at the adjusted point such as HAO. Refer to “Troubleshooting”. (page 40)	[Can't _ ADJ.]

2. AUTO adjustment mode

Step	Setting method	Remark	Display
1	Set the TEST mode to STOP.	No disc is loaded.	[EJECT]
2	Load a disc. Press the ►► (MD) button once.	AUTO pre-adjustment menu AUTO adjustment menu	[LOADING] [_ AUT _ YOBI _] [AUTO _ AJST _]
3	Press the REC/PAUSE(MD) button once. Adjusted values are output. Adjustment is completed.	Automatic pre-adjustment is started after sliding to the innermost track. “***” changes in the following order when a high reflecting disc (disc for reproduction) is used. PEG -> HAG “***” changes in the following order when a low reflecting disc (disc for recording) is used. PEG -> LAG -> GCG -> GEG -> LAG Proceed to Step 4 when adjustment is OK. Proceed to Step 5 when adjustment is NG.	[*** : _ _ _ _ _] [_ COMPLETE _] [Can't _ ADJ. _]
4	When adjustment is OK, press the REC/PAUSE(MD) button.	Continuous reproduction (bit section) (Address + C1 error display) Continuous reproduction (group section) (Address + C1 error display)	[s XXXX c YYYY] [a XXXX c YYYY]
5	Press the PROG button.(REMOCON) Press the CHARACTER button.	Continuous reproduction (group section) (Address + ADIP error display) Display returns to the AUTO adjustment menu display.	[a XXXX a YYYY] [AUTO _ AJST _]
6	When adjustment is NG, press the CHARACTER button.	There is an abnormality at the adjusted point such as PEG. Refer to “Troubleshooting”. (page 20)	[Can't _ ADJ. _]

Note) *** : Adjustment name, XXXX: Address, YYYY: Measured value

8. TEST-PLAY mode

(Use this mode to check that the playback function is provided at the specified address.)

Step	Setting method	Remark	Display
1	Load a disc.	AUTO pre-adjustment menu	[_ AUT _ YOBI _]
2	Press the MD EDIT button.	TEST-PLAY menu	[TEST _ PLAY _]
3	Press the PROG button.(REMOCON) Press the REC/PAUSE(MD) button.	ADDRESS setting (The initial value of the target address is displayed.) Set the search output to “H” while searching and back to “L” when continuous reproduction is started.	[ADRES _ 0050]
4	Continuous reproduction (bit section) Continuous reproduction (group section)	(Address + C1 error display) (Address + C1 error display)	[s XXXX c YYYY] [a XXXX c YYYY]
5	Press the PROG button.(REMOCON) Continuous reproduction (group section)	(Address + ADIP error display)	[a XXXX a YYYY]
6	Press the CHARACTER button.	TEST-PLAY menu	[TEST _ PLAY _]

- Every time the MD EDIT button is pressed in the address setting mode, the address changes in the order of 0050-> 03C0 -> 0700 -> 08A0 -> 0050 -> —
- Pressing the ►► (MD) button in the TEST-PLAY menu changes to the AUTO pre-adjustment menu.

9. TEST-REC mode

Use a disc for confirmation of recording function. (It is used to check the REC function at the specified address.)

Step	Setting method	Remark	Display
1	Load a disc.	AUTO pre-adjustment menu	[_ AUT _ YOB I _]
2	Press the MD EDIT button twice.	TEST-REC menu	[TEST _ REC _ _]
3	Press the REC/PAUSE(MD) button.	ADDRESS setting (The initial value of the address is displayed.)	[a0050 _ PW ZZ]
4	Press the REC/PAUSE(MD) button.	Set the search output to "H" while searching and back to "L" when continuous reproduction is started. Continuous recording	[a XXXX _ PW ZZ]
5	Press the CHARACTER button.	TEST-REC menu	[TEST _ REC _ _]

- Every time the MD EDIT button is pressed in the address setting mode, the address changes in the order of 0050-> 03C0 -> 0700 -> 08A0 -> 0050 -> —
- Pressing the >> (MD) button in the TEST-REC menu changes to the AUTO pre-adjustment menu.

10. INNER mode

Step	Setting method	Remark	Display
1	Load a disc.	AUTO pre-adjustment menu	[_ AUT _ YOB I _]
2	Press the >/00 (CD) button.	INNER menu	[_ _ INNER _ _ _]
3	Press the REC/PAUSE(MD) button.	INNER switch position is measured. (Both SUBQ address and C1 error are displayed.)	[s XXXX c YYYY]
4	Press the CHARACTER button.	INNER menu	[_ _ INNER _ _ _]

- Pressing the >> (MD) button in the INNER menu changes to the AUTO pre-adjustment menu.

11. EJECT mode

Step	Setting method	Remark	Display
1	EJECT status in the TEST mode	EJECT menu (No disc is loaded.)	[_ _ EJECT _ _ _]
2	Press the PROG button.(REMOCON)	Maximum power output status	[xPW _ _ _ _ _]
3	Press the PROG button.(REMOCON)	Recording power output status	[rPW _ _ _ _ _]
4	Press the PROG button.(REMOCON)	Reproduction power output status	[PPW _ _ _ _ _]
5	Press the MD EDIT edit button.	To TEMP setting of EEPROM setting (Refer to TEMP setting of EEPROM.)	
6	Press the >/00 (CD) button.	To CONTROL setting of EEPROM setting (Refer to CONTROL setting of EEPROM.)	
7	Press the CHARACTER button.	EJECT menu	[_ _ EJECT _ _ _]

● Confirmation of pick-up laser power

Recording and reproduction can be checked by using the laser power meter. However it should be used for checking only because there is variation in its measurement.

When the measured value is excessively deviated from the reference value, replace the pick-up.

Reference value (measured at room temperature of 25 °C)

During reproduction (ppw) : 0.72 ± 0.1 mW

During recording : 5.5 ± 0.5 mW

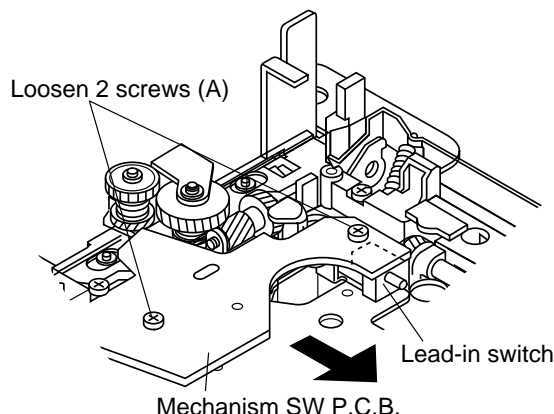
Note : Be very careful when using the laser power meter. The laser beam would cause damage to your eye if exposed to it directly.

● Lead-in switch position measurement mode

Load a TDYS1 disc for reproduction (high reflecting disc).

Note) Adjust the position of the lead-in switch to FF85 ~ FFD2.

1. Loosen 2 screws (A) fixing the mechanism switch P.C.B.
2. Retighten screws while pushing the mechanism switch P.C.B. in the arrow (<-) direction and then measure the position of the lead-in switch again. After adjusting the position, tighten 2 screws (A) securely. (Fig.25)



Note) Apply thread lock to 2 screws on the P.C.B. after tightening them.

Fig.25

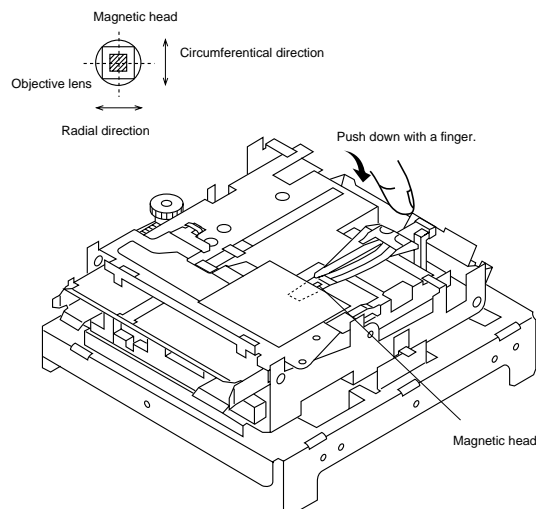
● Forced rotation of loading motor

It is possible to force the loading motor to rotate by turning the jog dial when the microprocessor version (t_{sm}13**e**) of the test mode or EJECT appears on display. (This is used when the disc cannot be ejected.)

* To obtain the microprocessor version on display When a disc is loaded, “_AUT _ YOB I _” appears on display. Press the CHARACTER key in this state, and the microprocessor version will appear.

● Confirmation of magnetic head installation position

- After replacing the magnetic head and the optical pick-up, be sure to confirm their installation positions.
 - To facilitate adjustment of their installation positions, bring the optical pick-up to the center position and follow the procedure described below.
1. Push down the up-shift arm of the magnetic head with a finger to raise the magnetic head.
 2. Looking at the unit from above, check if the magnetic head matches with the optical pick-up objective lens.
 3. Check to ensure that the magnetic head moves up and down smoothly.



MECHANISM ADJUSTMENT

When making adjustment, be sure to connect an extension cable for servicing and an expansion P.C.B. as shown in Fig.29.

1. Optical pickup rating inspection method

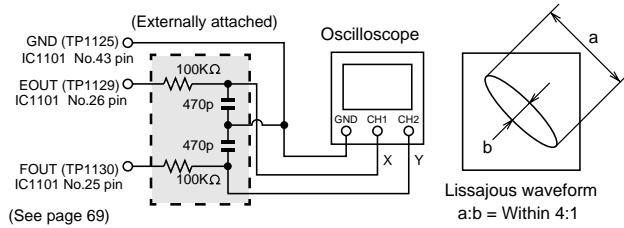


Fig. 26

After performing automatic adjustment in the AUTO mode selected from the test mode by using a high reflecting MD disc (COMPLETE status on display), adjust the EOUT to FOUT Lissajous waveform (x-y).

1. Loosen 3 screws of the spindle motor a little and make adjustment while watching the Lissajous waveform.
2. After adjustment, tighten screws in the order of (①), (②) and (③).

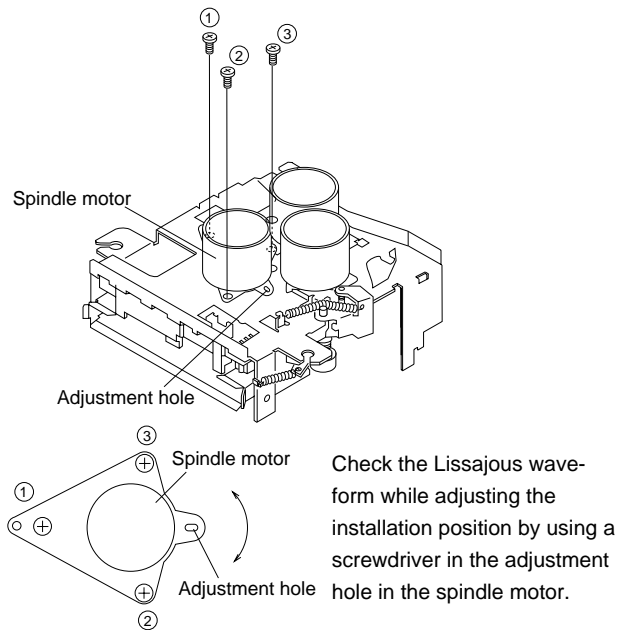


Fig. 27

2. Jitter verification method

After performing automatic adjustment in the AUTO mode selected from the test mode by using a low reflecting MD disc, confirm the jitter in the pit continuous reproduction mode and the groove continuous reproduction mode.

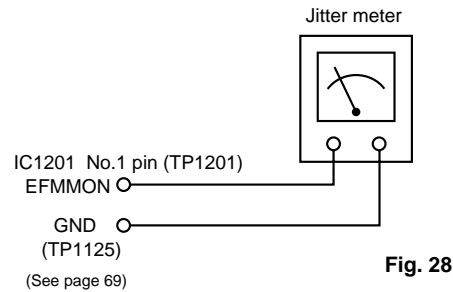


Fig. 28

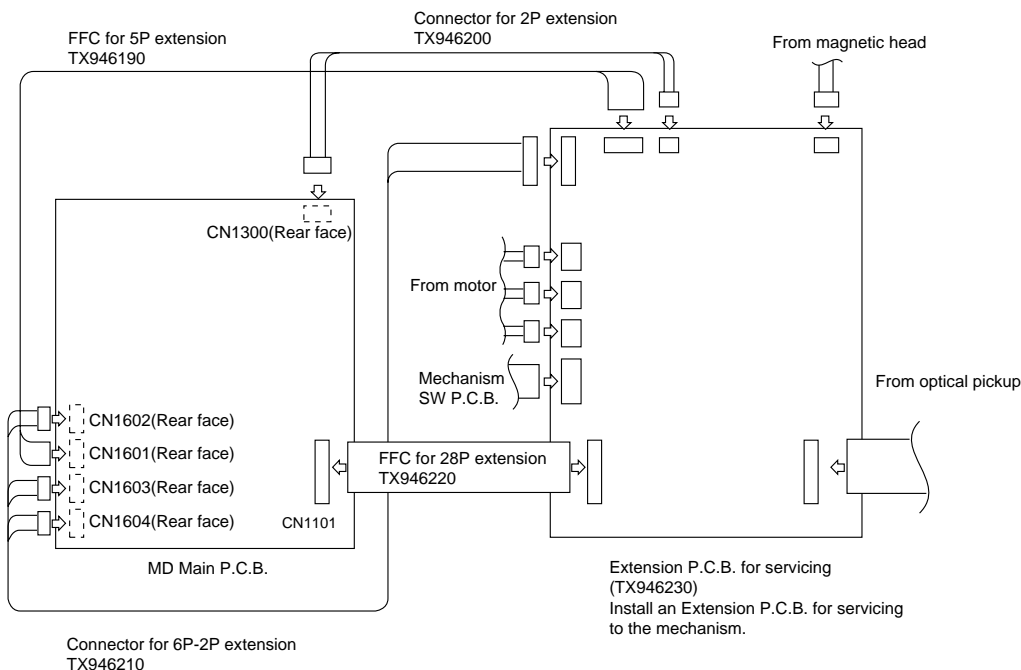


Fig. 29

PROCEDURE TO WRITE DATA INTO EE-PROM (IC1402)

1. Procedure to change the EE-PROM and write the initial value of the microprocessor into EE-PROM

- (1) Replace the EE-PROM.
- (2) Refer to the latest "List of EE-PROM contents".
- (3) Press the STANDBY/ON button while pressing the REC PAUSE(MD) button and the \triangleright/\square (CD) button to start the test mode.
- (4) Version on display

Version of EEPROM protect data (from 01)

|

t s m 1 3 * * e * *

|

Version of microprocessor ROM (from 01)

- (5) Load a disc.
[AUT YOBI]
- (6) Press the INPUT \triangleright button 6 times.
[EEPROM SET]
- (7) Perform the procedure to have "EE-PROM setting mode transition diagram" displayed, compare it with "List of EE-PROM contents" and set to "List of EE-PROM contents" by using the jog dial.
- (8) Set the temperature standard value.
(Refer to "Procedure to set the temperature standard value".)
- (9) Use the same settings as "List of EE-PROM contents" for all.
- (10) Set to the TEST mode and perform AUTO pre-adjustment and AUTO adjustment.
- (11) Cancel the TEST mode by pressing the \square (MD) button. (Writing into EEPROM starts from here.)

2. Procedure to set the temperature standard value

(This setting should be performed within the room temperature range of 21 °C ~ 29 °C.)

- (1) Have the AUTO pre-adjustment mode menu displayed.
[AUT YOBI]
- (2) Compensate the temperature to be suitable for the ambient temperature, referring to the table below.

Ambient temperature	Compensation value
+ 21.0 °C ~ + 23.2 °C	- 01 _H
+ 23.3 °C ~ + 26.8 °C	± 0 _H
+ 26.9 °C ~ + 23.7 °C	+ 01 _H

Example : When the ambient temperature is 22 °C and the temperature measured value is 7A_H
 Temperature set value = 7A_H - 01_H
 = 79_H

* When the measured temperature deflects between 2 values, use the smaller one as the measured value (79_H if measured values are 7A_H and 79_H).

- (3) Press the MD \triangleright button 6 times.
[EEPROM SET]
- (4) Press the REC/PAUSE(MD) button 7 times.
[Focus]

- (5) Press the MD \triangleright button 4 times.
[Temp]
- (6) Press the REC/PAUSE(MD) button.
[TEMP ○ ○ ◆ ◆]
 ○ ○ : Temperature measured value
 ◆ ◆ : Temperature set value
- (7) Adjust the temperature set value to the value obtained as described above by using the jog dial.
- (8) Press the CHARACTER button.
[EEPROM SET]

LIST OF EE-PROM CONTENTS

● Focus setting

Item on display	Set value
FG ○ ○	DA _H
FF1 ○ ○	70 _H
FF2 ○ ○	E0 _H
FZHLEV ○ ○	ED _H
FOKLEV _H ○ ○	08 _H
FOKLEV _F ○ ○	08 _H
FOKLPP _H ○ ○	00 _H
FOKPPV _F ○ ○	88 _H
WAIT _F ○ ○	90 _H

● Spin setting

Item on display	Set value
SPG ○ ○	20 _H
SPG-in ○ ○	B8 _H
SPG-mid ○ ○	95 _H
SPG-out ○ ○	79 _H
SP1 ○ ○	10 _H
SP2 ○ ○	87 _H
SP3 ○ ○	E3 _H
SP4 ○ ○	E3 _H
SP5 ○ ○	10 _H
SPDLIM ○ ○	7F _H

● Tracking setting

Item on display	Set value
TG ○ ○	6B _H
TF1 ○ ○	6B _H
TF2 ○ ○	E0 _H
SVCNT4 ○ ○	00 _H
TRBLV _o ○ ○	50 _H
TRBLV _t ○ ○	54 _H
TRkLV _o ○ ○	50 _H
TRkLV _t ○ ○	2E _H
TDPW _o ○ ○	89 _H
TDPW _t ○ ○	1A _H
SLCT _o ○ ○	00 _H
SLCT _t ○ ○	40 _H
SLCT _m ○ ○	53 _H
TCRSCIP ○ ○	16 _H
COTLVP ○ ○	0A _H
COTLV _r ○ ○	1C _H
WAIT _m ○ ○	FF _H

Item on display	Set value
SLG ○○	3B _H
SL2 ○○	18 _H
SLDLIM ○○	7F _H
SLDLEV ○○	12 _H
SLKLVk ○○	50 _H
SLKLVt ○○	3A _H
SLKLVm ○○	50 _H

Item on display	Set value
COK ○○	A0 H
FAT ○○	C0 H
TAT ○○	3E H
CAT ○○	20 H
FAB ○○	64 H
STR ○○	0A H
SFS ○○	0D H
STC ○○	0D H

Item on display	Set value
CONTROL1 ○ ○	80 _H
CONTROL2 ○ ○	02 _H
SPKLEV _m ○ ○	26 _H
ADJTTM ○ ○	14 _H
HDEQAD ○ ○	92 _H
LDEQAD ○ ○	8F _H
GDEQAD ○ ○	8D _H
HDEQBC ○ ○	8C _H
LDEQBC ○ ○	8F _H
GDEQBC ○ ○	8D _H
HALSG ○ ○	21 _H
LALSG ○ ○	21 _H
GALSG ○ ○	11 _H
HALSOFS ○ ○	FF _H
LALSOFS ○ ○	00 _H
GALSOFS ○ ○	00 _H

The diagram illustrates the state transitions for the AUTO PRE-ADJUSTMENT MODE MENU STATE. The main menu items are Focus, Spindle, Tracking, Sled, Temp, Control, and ADJUST. Each item has a list of sub-items, and the flow is indicated by arrows with MD (Menu Down) or PAUSE (Menu Up) labels. The diagram is organized into columns for each main menu item, with sub-items listed vertically. The flow starts from the main menu items and branches into sub-items, then continues through the sub-items. The diagram is a complex state machine diagram showing the navigation logic of the machine's menu system.

Focus

- REC/PAUSE(MD)

Spindle

- REC/PAUSE(MD)
- FG
- FF1
- FF2
- FZHLV
- FOKLEVn
- FOKLEVf
- FOKLPFn
- FOKLPFf
- WAITf
- SPG
- SPG_in
- SPG_mid
- SPG_out
- SP1
- SP2
- SP3
- SP4
- SP5
- SPDLIM

Tracking

- REC/PAUSE(MD)
- TG
- TF1
- TF2
- SVCNT4
- TRBLVo
- TRBLVt
- TRKLVo
- TRKLVt
- TDPWo
- TDPWt
- SLCTo
- SLCTt
- SLCTm
- TCRSCIP
- COTLVp
- COTLVr
- WAITm

Sled

- REC/PAUSE(MD)
- SLG
- SL2
- SLDLIM
- SLDLV
- SLKLVk
- SLKLVt
- SLKLVm

Temp

- REC/PAUSE(MD)
- TEMP_

Control

- REC/PAUSE(MD)
- CONTRL1
- CONTRL2
- SPKLEVm
- ADJTTM
- HDEQAD
- LDEQAD
- GDEQAD
- HDEQBC
- LDEQBC
- GDEQBC
- HALSG
- LALSG
- GALSG
- HALSOFS
- LALSOFS
- GALSOFS

ADJUST

- REC/PAUSE(MD)
- COK
- FAT
- TAT
- CAT
- FAB
- STR
- SFS
- STC

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■ MD ERROR DISPLAY

Error on display	Description	Countermeasure
Can't REC	<ul style="list-style-type: none"> • DEFECT occurred 10 times continuously during REC-PLAY. • Recordable cluster became "0" due to occurrence of DEFECT during REC-PLAY. • REC mode cannot be set for 20 seconds even after repeated try of reading the read disabled address. 	<ul style="list-style-type: none"> • Check that the disc is free from scratch, dust, finger print, black spot, etc. and that decentering, face deflection, etc. are not excessive.
Can't Copy	<ul style="list-style-type: none"> • One of the following judgments has been made depending on the channel status of the digital signal inputted from D-IN during REC-PAUSE or REC-PLAY. <p>(1) Other than audio (2) Other than civil purpose (3) Copy NG due to reversed COPY bit of CD</p>	<ul style="list-style-type: none"> • Check if the CD is a copy inhibited on (e.g., CD-R, etc.)
DIGin Unlock	<ul style="list-style-type: none"> • Either of the following symptoms occurred for the digital signal inputted from D-IN during REC-PAUSE or REC-PLAY. <p>(1) Digital IN PLL is unlocked. (2) Locked under conditions other than FS=44.1kHz.</p>	<ul style="list-style-type: none"> • Check that the D-IN signal line is free from abnormality.
TOC Full	<ul style="list-style-type: none"> • No space is left to register music No and character data (song name, disc name, etc.) while the REC-PLAY function is used. • No recordable space is left when trying to activate the REC-PAUSE function. 	<ul style="list-style-type: none"> • Use a disc for recording and reproduction with a space left to register UTOC.
UTOC ERR R	<ul style="list-style-type: none"> • "FTNO > LTNO" occurred. • "FTNO = 0 or 1" occurred. • UTOC recorded in the disc could not be read. 	<ul style="list-style-type: none"> • As an abnormality exists in the UTOC data, use another disc.
UTOC ERR A	<ul style="list-style-type: none"> • "Start address > end address" occurred. 	
UTOC ERR L0 ~ 4	<ul style="list-style-type: none"> • Any one of the UTOC0 ~ 4 data was looped. 	
Not Audio	<ul style="list-style-type: none"> • Data not for audio purpose is recorded in the track mode of TNO which is currently selected. 	<ul style="list-style-type: none"> • Select another TNO or use another disc.
Disc Full	<ul style="list-style-type: none"> • No recordable space is left when trying to activate the REC-PAUSE function. 	<ul style="list-style-type: none"> • Use another disc for recording with a recordable space left.
Playback MD	<ul style="list-style-type: none"> • The loaded disc was for reproduction only when trying to activate the REC-PAUSE function or trying to edit. 	<ul style="list-style-type: none"> • As the loaded disc is for reproduction only, use a disc for recording.
Protected	<ul style="list-style-type: none"> • Recording of editing was attempted while the data protector of the disc for recording and reproduction is set to the data protected state. • Editing the track subject to write protect function was attempted by using the data written in UTOC. 	<ul style="list-style-type: none"> • Try again with the data protector set to the original position. • As the track to be edited is write protected, try again with another track.

Error on display	Description	Countermeasure
Can' t Edit	<ul style="list-style-type: none"> Editing conditions were not satisfied with respect to each editing function. 	<ul style="list-style-type: none"> Wrong operation procedure was used. Try again by using the correct procedure.
TMP Over!!	<ul style="list-style-type: none"> The temperature in the set (MD unit) went up excessively high due to occurrence of some abnormality. 	<ul style="list-style-type: none"> Check according to troubleshooting. Check the temperature of the area where the unit is used.
DISC ERR R DISC ERR S DISC ERR W	<ul style="list-style-type: none"> The data was not correct or it was not possible to read it correctly. Recording the music data failed as an abnormality occurred while recording it. 	<ul style="list-style-type: none"> Use another disc as there is an abnormality in TOC or UTOC data or the disc has a scratch or other faulty condition.
TOC ERR S TOC ERR R	<ul style="list-style-type: none"> The TOC data was not correct. It was not possible to read the TOC data. 	<ul style="list-style-type: none"> The TOC data recorded in the disc is not in compliance with the MD standard. Use another disc as the disc has a scratch or other faulty condition.
U TOC W ERR	<ul style="list-style-type: none"> It was not possible to rewrite UTOC correctly and an abnormality occurred while rewriting it. 	<ul style="list-style-type: none"> Use another disc as the disc has a scratch or other faulty condition.
FOCUS ERR	<ul style="list-style-type: none"> The disc was loaded but it was not possible to draw in FOCUS. 	<ul style="list-style-type: none"> Check that the disc is free from scratch, dust, finger print, black spot, etc. and that decentering, face deflection, etc. are not excessive.
BLANK DISC	<ul style="list-style-type: none"> The total number of TNO and NAME characters was "0" as a result of reading UTOC. 	<ul style="list-style-type: none"> Check if the disc is recordable by actually recording.
TOC W ERROR	<ul style="list-style-type: none"> UTOC can be read but cannot be rewritten. 	<ul style="list-style-type: none"> Check if the recording head contacts properly and if wiring from the circuit board to the recording head is free from breakage.
EEPROM ERROR	<ul style="list-style-type: none"> The EEPROM data is not correct 	<ul style="list-style-type: none"> Try again after resetting and if still NG, replace EEPROM.

Mechanism Error

Error on display	Description
MECHA_ERR2_*	The head fails to move up.
MECHA_ERR3_*	The head fails to move down.

HINF (IC1401 No.97 pin)

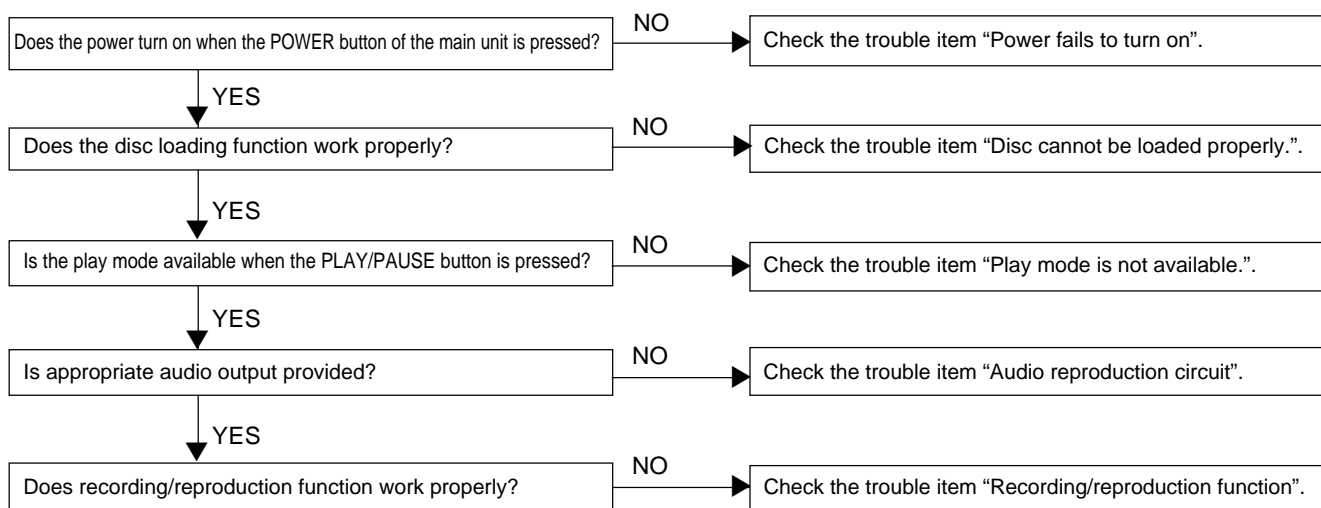
* = E	Eject completed position	< 1.3 V
* = M	Horizontal midway position	> 3.06 V
* = L	Load completed position	1.853 ~ 2.48 V
* = D	Head down position	1.3 ~ 1.853 V

■ MD TROUBLESHOOTING

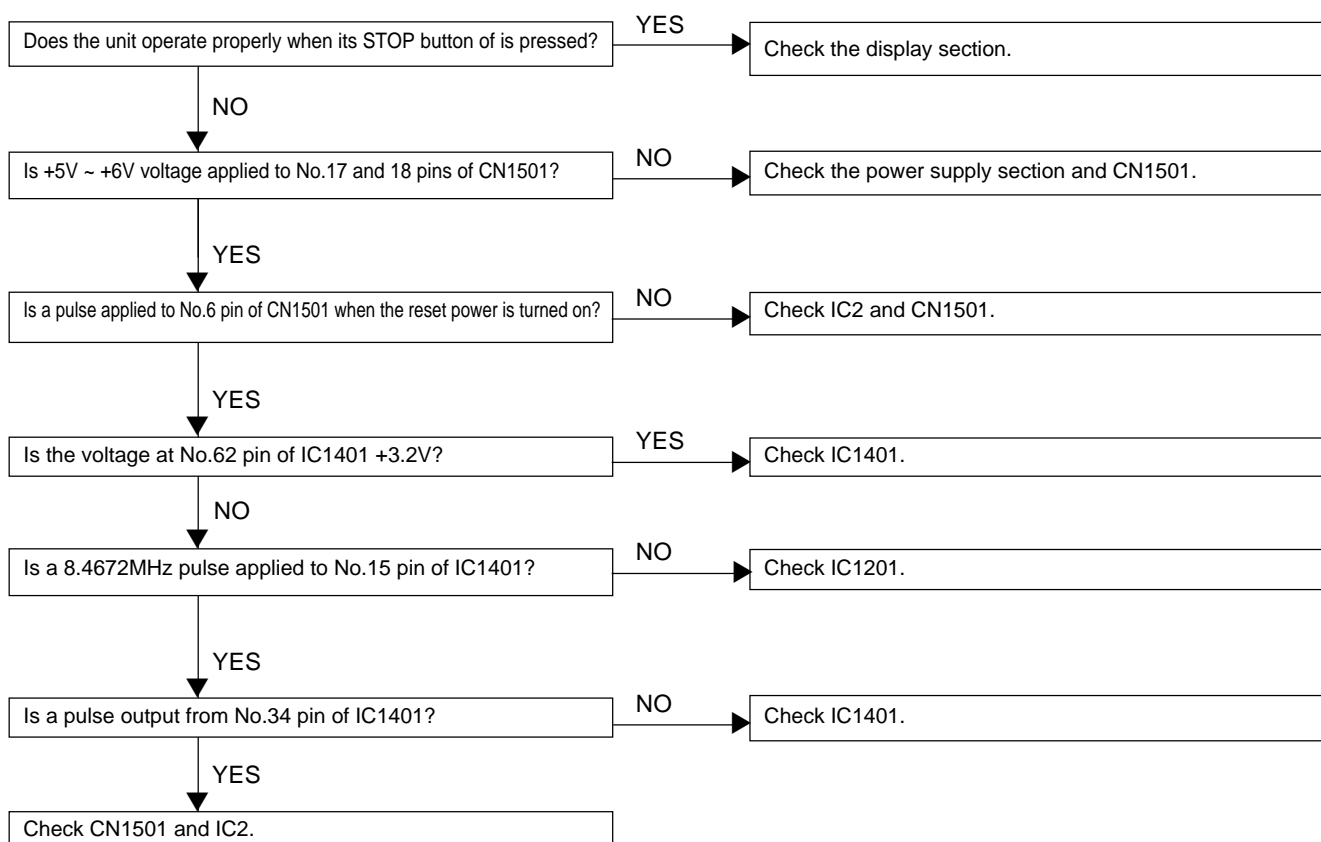
When MD fails to operate

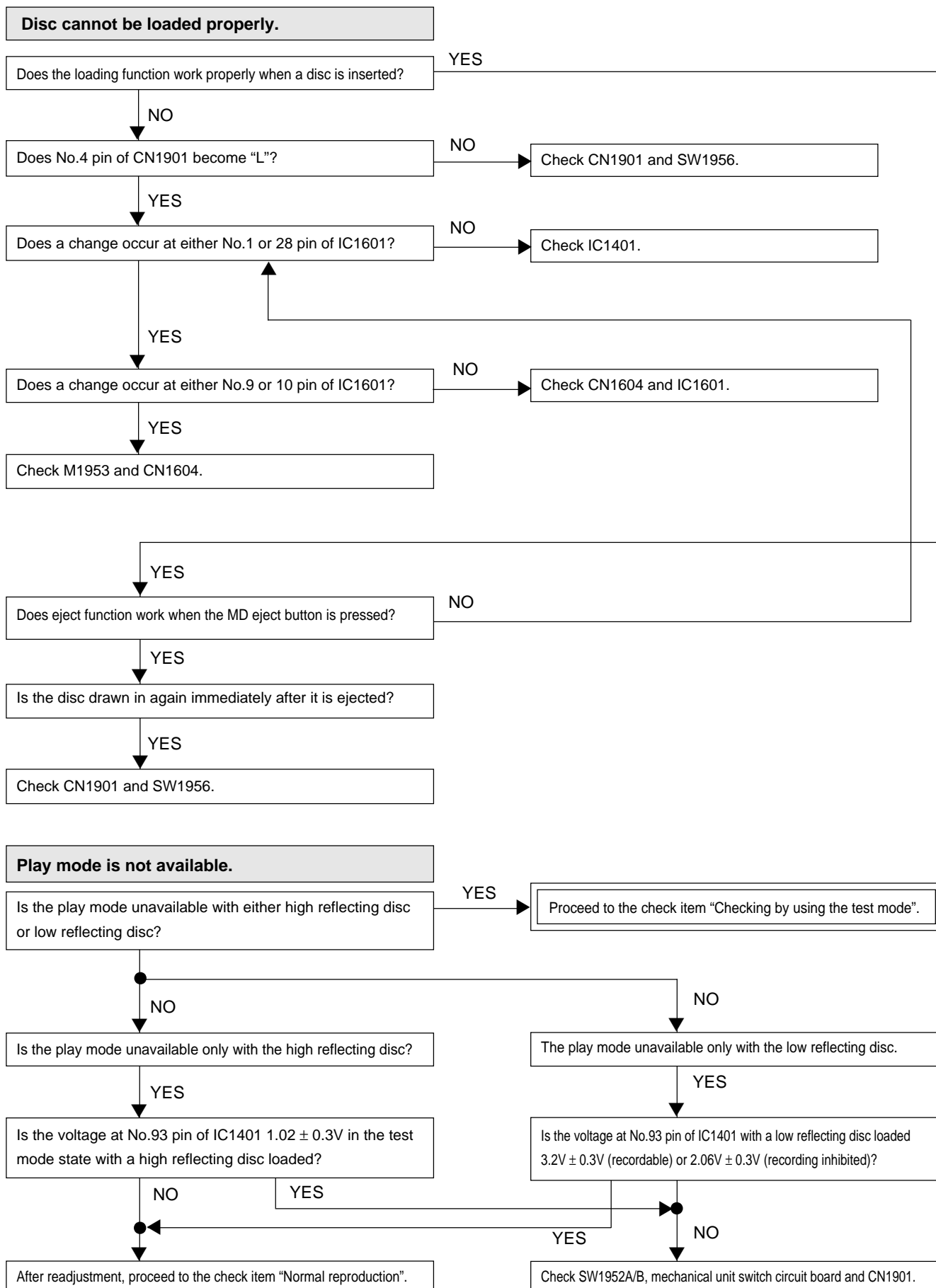
When the objective lens of the optical pickup becomes dirty, MD may fail to operate. Clean the objective lens first and check MD for reproduction function. If it still fails to operate, check according to the following flow charts. Contaminant on the pickup lens such as dust and a foreign matter may cause the pickup to skip or the TOC (content of the selection) not to be displayed. Check if the lens is clean before making adjustments. If the lens is dirty, clean it as follows.

- Turn off the power. Dampen the lens cleaning paper with a small amount of isopropyl alcohol and wipe the lens with it, using care not to cause any damage to the lens. Be sure not to touch the lens with your hand directly.



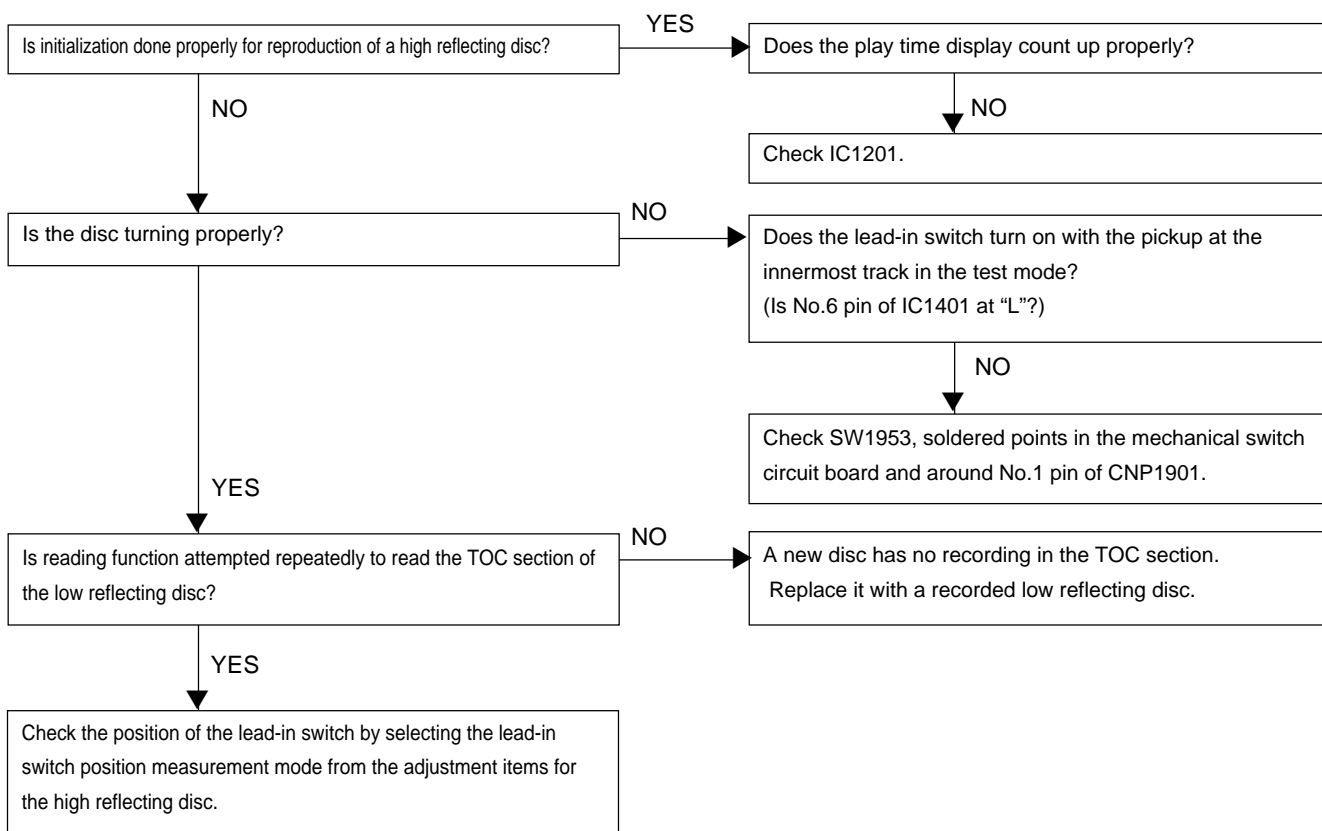
Power fails to turn on.





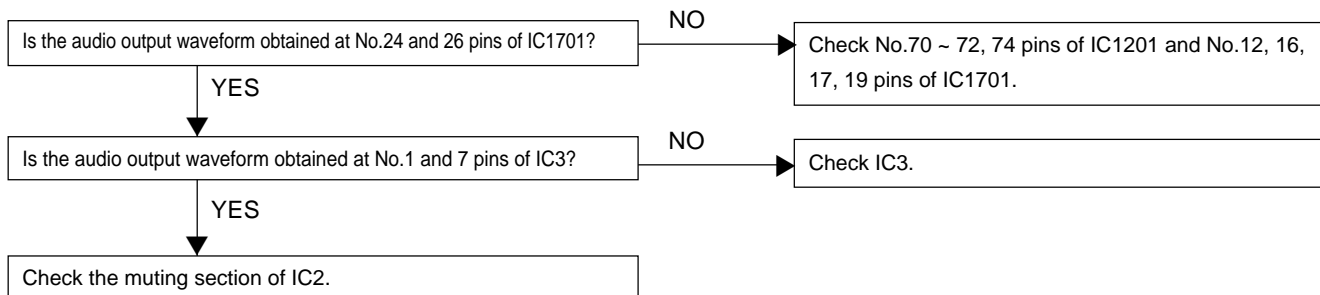
Normal reproduction

Applicable when the E2-PROM value has been confirmed as normal in the test mode



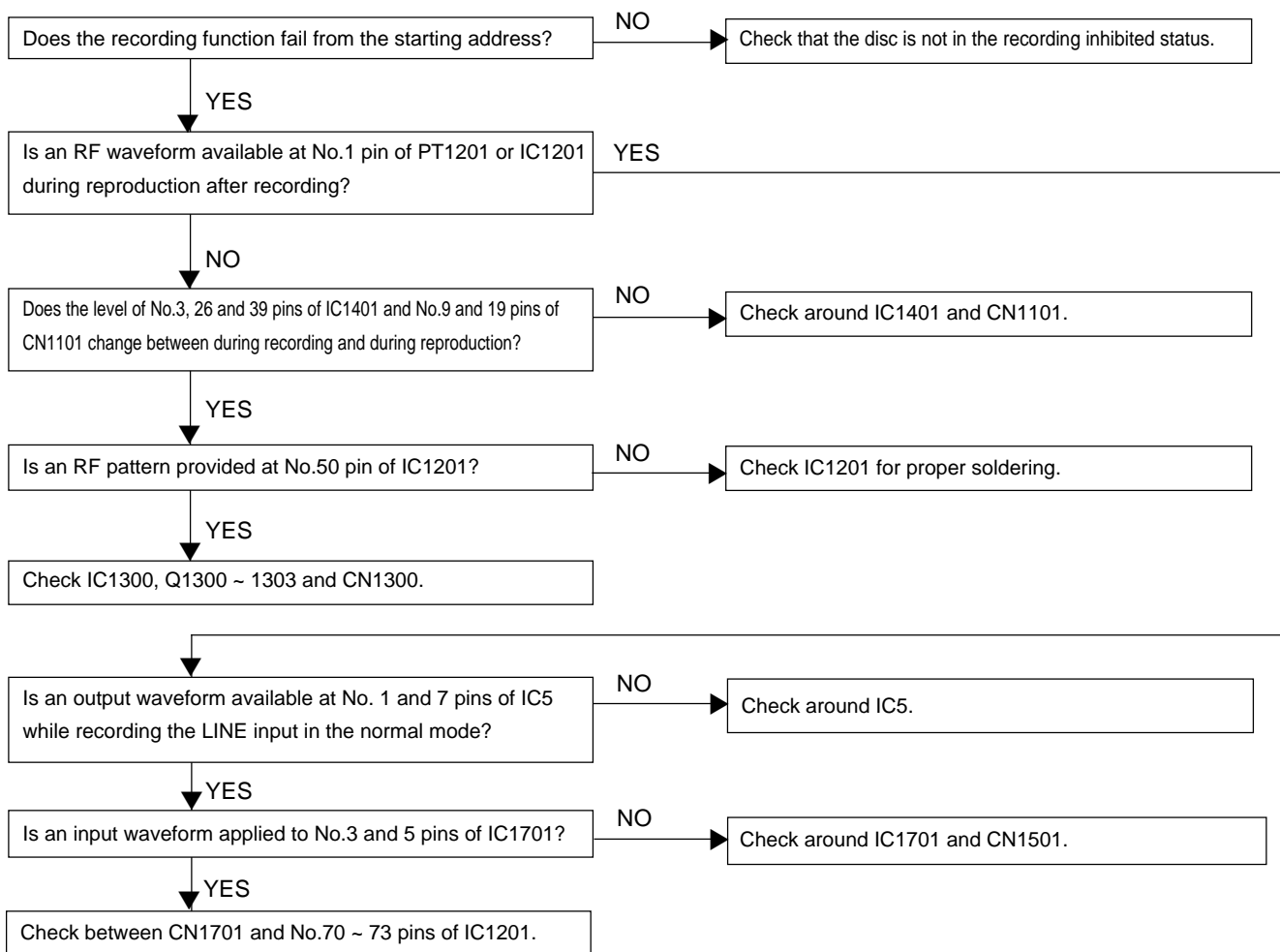
Audio reproduction circuit

Applicable when no sound is produced although the play time display counts up properly during reproduction in the normal mode

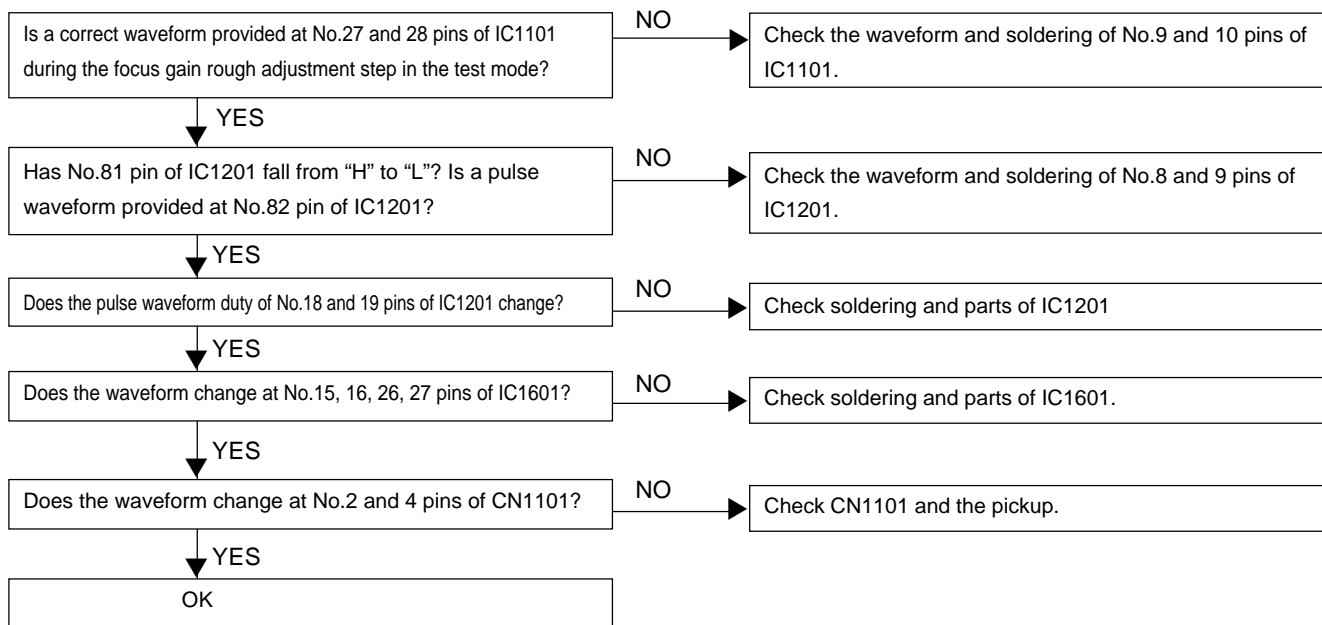


Recording/reproduction function

Load a low reflection disc and after confirming the audio output in the normal reproduction mode, execute recording/reproduction.



Focus servo function does not work.



Disc motor does not run.

Is a correct waveform provided at No.24 and 25 pins of IC1201 during the focus gain rough adjustment step in the test mode?

NO

Check No.24 and 25 pins of IC1201 as well as soldering and parts of the peripheral circuit.

YES

Is a waveform provided at No.11 and 12 pins of IC1601 as well as at No.1 and 2 pins of CN1603?

NO

Check the circuit boards of IC1601 and the complete disc motor of CN1601 for soldering.

YES

Replace the disc motor as a complete unit.

Tracking servo function does not work.

Is a correct waveform provided at No.17 and 18 pins of IC1601 as well as at No.1 and 3 pins of CN1101 during the tracking gain adjustment step in the test mode?

NO

Check No.20 and 21 pins of IC1201, IC1601 and CN1101 for soldering.

YES

Replace the pickup head

Slide servo function does not work.

Does the pickup move outward and inward when the ►► and ◄◄ button is pressed respectively in the test mode?

NO

Check the waveform at No.22 and 23 pins of IC1201, peripheral parts and soldering.

NO

Does a change occur at No.22 and 23 pins of IC1201 when ►► and ◄◄ buttons are pressed?

NO

Check the waveform at No.22 and 23 pins of IC1201, peripheral parts and soldering.

YES

Does a change occur at No.13 and 14 pins of IC1601 and No.1 and 2 pins of CN1602 when the ►► and ◄◄ buttons are pressed?

NO

Check IC1601 and 1602 for soldering.

YES

Does a voltage change occur at the + and - terminals of the slide motor when the ►► and ◄◄ buttons are pressed?

NO

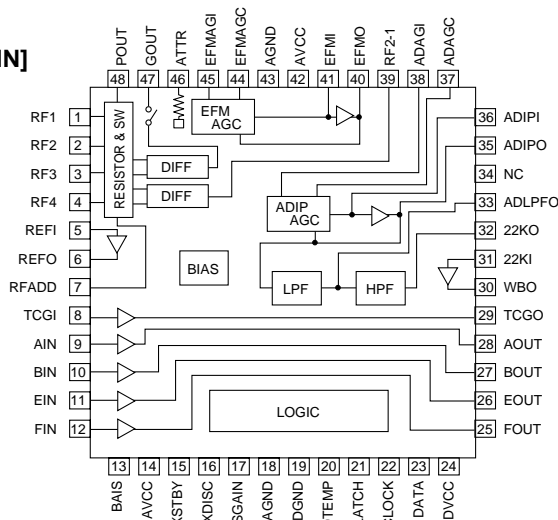
Check the connection section to the slide motor for soldering and broken wire.

YES

Replace the slide motor.

IC DATA

IC1101 : IR3R55 [P.C.B. MD MAIN]
RF Signal Processing

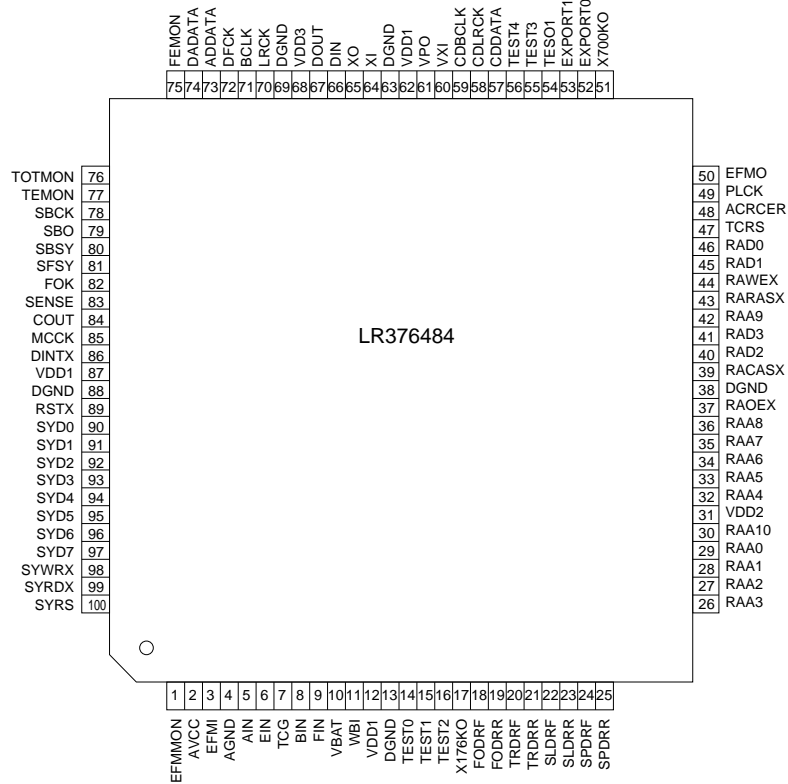


No.	Pin Name	Function
1	RF1	RF signal input terminal 1 to input RF signal output from pickup
2	RF2	RF signal input terminal 2 to input RF signal output from pickup
3	RF3	RF signal input terminal 3 to input RF signal output from pickup
4	RF4	RF signal input terminal 4 to input RF signal output from pickup
5	REFI	Amplifier input terminal for reference voltage
6	REFO	Amplifier output terminal for reference voltage
7	RFADD	Output terminal for added resistance of RF1 ~ 4
8	TCGI	Amplifier input terminal for track cross detect signal when in groove section
9	AIN	Amplifier (focus servo system) reverse input terminal for servo signal
10	BIN	Amplifier (focus servo system) reverse input terminal for servo signal
11	EIN	Amplifier (tracking servo system) reverse input terminal for servo signal
12	FIN	Amplifier (tracking servo system) reverse input terminal for servo signal
13	BIAS	Bias input terminal
14	AVCC	Power supply terminal for analog section
15*	VSTBY	Output terminal for logic signal (Inverse STBY signal is output.)
16*	XDISC	Output terminal for logic signal (Inverse DISC signal is output.)
17*	XSGAIN	Output terminal for logic signal (Inverse SGAIN signal is output.)
18	AGND	Ground terminal for analog section
19	DGND	Ground terminal for digital section
20	DTEMP	Chip temperature detect terminal
21	LATCH	Input terminal for latch signal
22	CLOCK	Input terminal for clock signal
23	DATA	Input terminal for serial data
24	DVCC	Power supply terminal for digital section
25	FOUT	Amplifier (tracking servo system) output terminal for servo signal
26	EOUT	Amplifier (tracking servo system) output terminal for servo signal
27	BOUT	Amplifier (focus servo system) output terminal for servo signal
28	AOUT	Amplifier (focus servo system) output terminal for servo signal
29	TCGO	Amplifier output terminal for track cross detect signal when in groove section
30	WBO	Comparator output terminal to make ADIP signal into binary value
31	22KI	Comparator input terminal to make ADIP signal into binary value
32	22KO	HPF amplifier output terminal for ADIP signal
33*	ADLPFO	LPF amplifier output terminal for ADIP signal
34*	NC	NC
35	ADIPO	Pre-amplifier output terminal for ADIP signal
36	ADIPI	AGC amplifier output terminal for ADIP signal
37	ADAGC	AGC smooth capacitor connecting terminal for ADIP signal
38	ADAGI	AGC amplifier input terminal for ADIP signal
39	RF2-1	RF1, RF2 differential signal
40	EFMO	Pre-amplifier output terminal for RF signal
41*	EFMI	AGC amplifier output terminal for RF signal
42	AVCC	Power supply terminal for analog section
43	AGND	Ground terminal for analog section
44	EFMAGC	AGC smooth capacitor connecting terminal for EFM signal
45	EFMAGI	AGC amplifier input terminal for EFM signal
46*	ATTR	Terminal to attenuate 47, 48 pin output signal
47	GOUT	Output terminal for RF1+RF2-RF3-RF4 signal when in groove section
48	POUT	Output terminal for added resistance of RF1 ~ 4 when in pit section

The * marked terminal is a terminal which is not connected externally (open terminal).

IC1201 : LR376484 [P.C.B. MD MAIN]

ATRAC Encoder/Decoder



No.	Pin Name	I/O	Function
1*	EFMMON	O	EFM monitor output
2	AVCC		Power supply terminal for analog section
3	EFMI	I	Input terminal for EFM signal from RF amplifier
4	AGND		Ground terminal for analog section
5	AIN	I	Focus error signal A
6	EIN	I	Tracking error signal E
7	TCG	I	Tracking cross signal
8	BIN	I	Focus error signal B
9	FIN	I	Tracking error signal F
10	VBAT	I	Power supply voltage detect signal for constant voltage servo
11	WBI	I	ADIP wobble signal
12	VDD1		Power supply terminal for digital section
13	DGND		Digital ground terminal
14,15	TEST0,TEST1	I	Test input terminal, connected to GND when in normal use
16	TEST2	I	Test input terminal, to select encode/decode/servo mode or ATRAC mode. Connected to GND in normal use
17	X176KO	O	Clock output. f=176.4KHz (4fs)
18	FODRF	O	Focus servo forward output. PWM
19	FODRR	O	Focus servo reverse output. PWM
20	TRDRF	O	Tracking servo forward output. PWM
21	TRDRR	O	Tracking servo reverse output. PWM
22	SLDRF	O	Slide servo forward output. PWM
23	SLDRR	O	Slide servo reverse output. PWM
24	SPDRF	O	Spindle servo forward output or spindle serve output. PWM
25	SPDRR	O	Spindle servo reverse output or switching of spindle rotation forward/reverse
26	RAA3	O	Address output to external D-RAM. ADR3
27	RAA2	O	Address output to external D-RAM. ADR2
28	RAA1	O	Address output to external D-RAM. ADR1
29	RAA0	O	Address output to external D-RAM. ADR0 (LSB)
30*	RAA10	O	Address output to external D-RAM. ADR10 (MSB)
31	VDD2		Power supply terminal for DRAM interface
32	RAA4	O	Address output to external D-RAM. ADR4
33	RAA5	O	Address output to external D-RAM. ADR5
34	RAA6	O	Address output to external D-RAM. ADR6

The * marked terminal is a terminal which is not connected externally (open terminal).

IC1201 : LR376484 [P.C.B. MD MAIN]

ATRAC Encoder/Decoder

No.	Pin Name	I/O	Function
35	RAA7	O	Address output to external D-RAM. ADR7
36	RAA8	O	Address output to external D-RAM. ADR8
37	RAOEX	O	Data output enable signal output to external D-RAM
38	DGND		Ground terminal for digital section
39	RACASX	O	Column address strobe signal output to external D-RAM
40	RAD2	I/O	Data input/output with external D-RAM. D2
41	RAD3	I/O	Data input/output with external D-RAM. D3 (MSB)
42	RAA9	O	Address output to external D-RAM. ADR9
43	RARASX	O	Low address strobe signal output to external D-RAM
44	RAWEX	O	Data write enable signal output to external D-RAM
45	RAD1	I/O	Data input/output with external D-RAM. D1
46	RAD0	I/O	Data input/output with external D-RAM. D0 (LSB)
47*	TCRS	O	Track cross signal
48*	ACRCER	O	CRC error flag monitor output of ADIP
49*	PLCK	O	EFM PLL clock output during reproduction
50	EFM0	O	EFM signal output during recording and C1F (C1 error flag) monitor output during reproduction
51*	X700KO	O	Clock output. f=705.6KHz. No clock output when RSTX=0.
52*	EXPORT0	O	Microprocessor expansion output port 0
53*	EXPORT1	O	Microprocessor expansion output port 1
54*	TESO1	O	Microprocessor expansion output port 2 when switching PLLLR.
55	TEST3	I/O	Microprocessor expansion output port 3 when switching PLLOSC.
56	TEST4	I/O	Microprocessor expansion output port 4 when switching EXTCLK.
57	CDDATA	I/O	CD data input for high speed dubbing. Microprocessor expansion output port 5 when switching.
58	CDLRCK	I/O	CD LR clock input for high speed dubbing. Microprocessor expansion output port 6 when switching.
59	CDBCLK	I/O	CD bit clock input for high speed dubbing. Microprocessor expansion output port 7 when switching.
60	VXI	I	PLL clock input for variable pitch.
61*	VPO	O	PLL phase error output for variable pitch.
62	VDD1		Power supply terminal for digital section
63	DGND		Ground terminal for digital section
64	XI	I	Oscillation circuit input. 33.8688MHz
65	XO	O	Oscillation circuit output. 33.8688MHz
66	DIN	I	Digital input signal
67	DOUT	O	Digital output signal
68	VDD3		Power supply terminal for internal PLL
69	DGND		Ground terminal for digital section
70	LRCK	O	Output terminal for switching music data to Lch, Rch
71	BCLK	O	Shift clock for music data
72	DFCK	O	Clock for AD/DA converter digital filter. 256Fs
73	ADDATA	I	Voice data input
74	DADATA	O	Voice data output
75*	FEMON	O	Focus error signal monitor output
76*	TOTMON	O	Total signal monitor output
77*	TEMON	O	Tracking error signal monitor output
78	SBCK	I	DIN sub-code reading clock. EIAJ CP-309 format
79	SBO	O	DIN sub-code serial data. EIAJ CP-309 format.
80	SBSY	O	DIN sub-code block synchronous signal. EIAJ CP-309 format.
81	SFSY	O	DIN sub-code frame synchronous signal. EIAJ CP-309 format.
82	FOK	O	Focus OK detect signal. "0": focus OK
83	SENSE	O	Servo state detect signal. "1": Auto move, auto jump, auto focus being drawn in
84	COUT	O	Track cross signal output
85	MCKK	O	Clock output for microprocessor. Clock output also when RSTX=0
86	DINTX	O	Output terminal used to request interrupt into system control interface.
87	VDD1		Power supply terminal for digital section
88	DGND		Ground terminal for digital section
89	RSTX	I	Chip reset input. Reset at "L" (Note)
90	SYD0	I/O	Data bus terminal of system control interface (LSB)
91 ~ 96	SYD1 ~ SYD6	I/O	Data bus terminal of system control interface.
97	SYD7	I/O	Data bus terminal of system control interface. (MSB)
98	SYWRX	I	Input terminal for register write pulse of system control interface
99	SYRDX	I	Input terminal for register read pulse of system control interface
100	SYRS	I	Input terminal for register selection of system control interface

The * marked terminal is a terminal which is not connected externally (open terminal).

(Note) Set RSTX to "L" when or after turning on the power supply.

IC1401 : iX0290AW [P.C.B. MD MAIN]

MD System Microprocessor

No.	Pin Name	I/O	Function
1*	NX	O	Input/output port P96
2	SBCK	O	Input/output port P95
3	LDVAR	O	LDVAR (Laser power adjustment output)
4*	ADIS	O	ADJS (for automatic adjustment step check)
5	SFSY	O	Input/output port P92
6	LOADIN	I	LD SW CK input (interrupt input only when used individually)
7	ERROR	I	ERR input (UNLOCK of monitor PLL)
8	BYTE	I	GND
9	CNVss	I	GND
10	STID OUT	O	ST-ID output
11	SEACH OUT	O	MD search output
12	RESET	I	RESET input
13*	NC		Clock output
14	Vss		GND
15	MCCK	I	EXTAL (8.4672MHz)
16	Vcc		+3.15V
17	P85	I	Input/output port P85
18	DINT	I	DINT (interrupt input from MD•LSI)
19	DSENSE	I	DSENSE (servo sense input from MD•LSI)
20	ST-ID	I	ST-ID input (MD-ON)
21	SERCH	I	CD search input (Synchro REC interrupt input)
22	MDRSW	O	MD RSW output
23*	FSW	I	FSW1 (SW for power frequency switching)
24	VARI-PSW	O	Corresponding measure to variable pitch, provided (H)/ not provided (L)
25	P-DOWN	I	P-DOWN (power failure detect)
26	HD ON	O	HDON (Magnetic head current ON/OFF output)
27	LD+	O	LD+ (Loading motor + control output)
28	LD-	O	LD- (Loading motor - control output)
29	CIN	I	CIN (Track count signal input)
30	INNER	I	INN SW (Inner SW detect input)
31	DATA	O	R-DATA
32	LATCH	O	R-LATCH
33	CLOCK	O	R-CLK
34	DSTB	O	DSTB (System control communication possible and communication being executed)
35	MD DATA	O	MD DATA (MD data output)
36	K DATA	I	K DATA (System control data input)
37	DSCK	I	DSCK (System control communication clock input)
38	4M/16M	I	4M/16M DRAM select input
39	R/P	O	R/P output (REC/PLAY switching)
40	FOK	I	FOK (Focus servo state monitor input)
41	PLL SEL	O	Input/output port P55
42	S2	O	S2 output
43	S1	O	S1 output
44	SYRS	O	SYRS (MD-LSI register select signal output)
45	SYRD	O	SYRD (MD-LSI read signal output)
46	SYWR	O	SYWR (MD-LSI write signal output)
47	SYS D7	I/O	SYS D7 (Data bus 7)
48	SYS D6	I/O	SYS D6 (Data bus 6)
49	SYS D5	I/O	SYS D5 (Data bus 5)
50	SYS D4	I/O	SYS D4 (Data bus 4)
51	SYS D3	I/O	SYS D3 (Data bus 3)
52	SYS D2	I/O	SYS D2 (Data bus 2)
53	SYS D1	I/O	SYS D1 (Data bus 1)
54	SYS D0	I/O	SYS D0 (Data bus 0)

The * marked terminal is a terminal which is not connected externally (open terminal).

IC1401 : iX0290AW [P.C.B. MD MAIN]

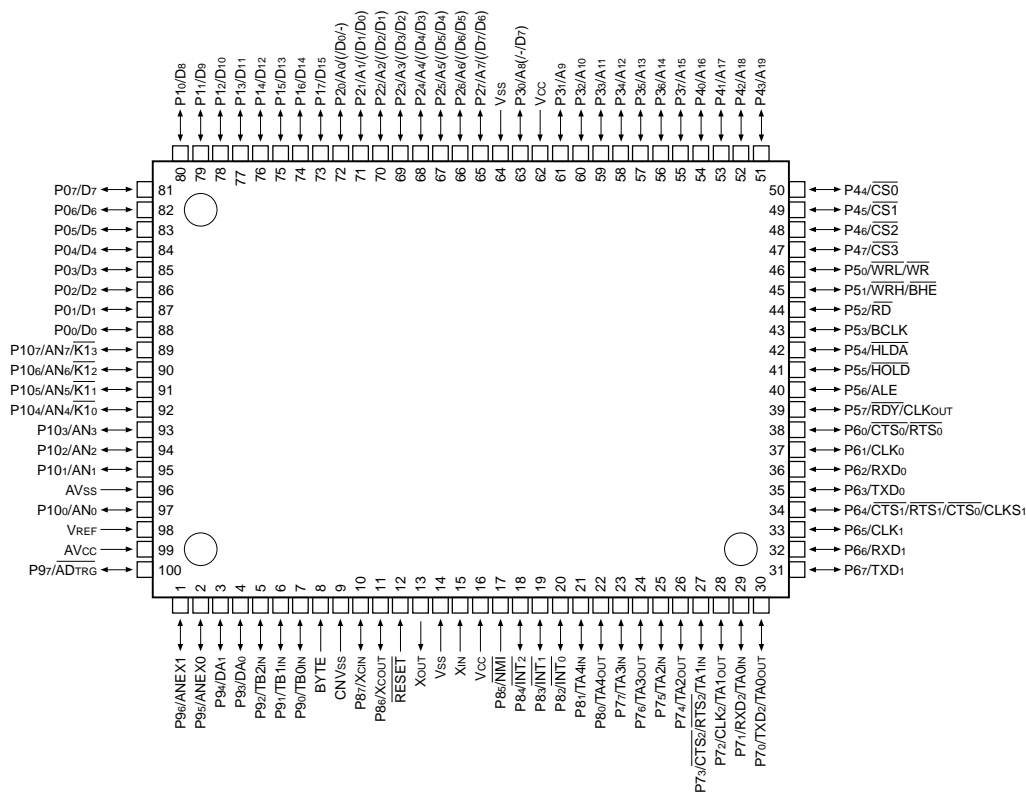
MD System Microprocessor

No.	Pin Name	I/O	Function
55*	P37/A15	O	Input/output port P37
56*	P36	O	Input/output port P36
57*	P35	O	Input/output port P35
58	EEPRO	O	EEPRO (E2PROM protect cancel)
59	EPCS	O	EPCS (E2PROM chip selector output)
60	EEPD	I/O	EEPD (E2PROM serial data output)
61	EEPK	O	EEPK (E2PROM serial clock output)
62	Vcc	I	+3.15V
63*	P30	O	Input/output port P30
64	GND		GND
65	L3 DATA	O	L3 DATA (soft serial communication, 2 modes provided, LSB first)
66	L3 MODE	O	L3 MODE (soft serial communication, 2 modes provided, LSB first)
67	L3 CLK	O	L3 CLK (soft serial communication, 2 modes provided, LSB first)
68*	P24	O	Input/output port P24
69*	P23	O	Input/output port P23
70	PCNT0	O	PCNT0 output
71*	PCNT1	O	Input/output port
72	LD ON	O	LDON output (H: ON)
73	A/B	O	ANLPTR output
74	SBSY	O	ADPON output (for CK)
75*	DAP ON	O	DAPON output (for CK)
76*	DFS0	O	DFS0 output
77*	DFS1	O	DFS1 output
78	DIG EX	O	DIG EX output (for CK)
79	DIG CD	O	DIG CD OUTPUT (for CK)
80	XRST	O	XRST (system reset output)
81*	AD MUTE	O	ADMUTE output (for CK)
82*	EMPH	O	EMPHA output (for CK)
83*	DAMUT	O	DAMUTE output (for CK)
84	MUTE	O	MUTE output
85	DOUTM	O	DOUTM output (for CK)
86	TEST2	I	TEST2 (special mode select 2)
87	TEST1	I	TEST1 (special mode select 1)
88	TEST0	I	TEST0 (special mode select 0)
89	AVCK3	I	AVCK3 (special mode monitor input)
90	AVCK2	I	AVCK2 (AD/DA section 3.1V monitor input)
91	AVCK1	I	AVCK1 (DOUT section 5V monitor input)
92	DTEMP	I	DTEMP (temperature detect input)
93	MINF	I	MINF (for each disc type/REC input)
94	TEST K1	I	TEST K1 (test key input 1)
95	TEST K2	I	TEST K2 (test key input 2)
96	GND		GND
97	HINF	I	HINF (mechanical unit position/head position)
98	VREF		+3.15V
99	AVcc		+3.15V
100	S80	I	Input/output port

The * marked terminal is a terminal which is not connected externally (open terminal).

IC2 : M30622M8-xxxFP [P.C.B. MD]

Main System Microprocessor (MD CPU)



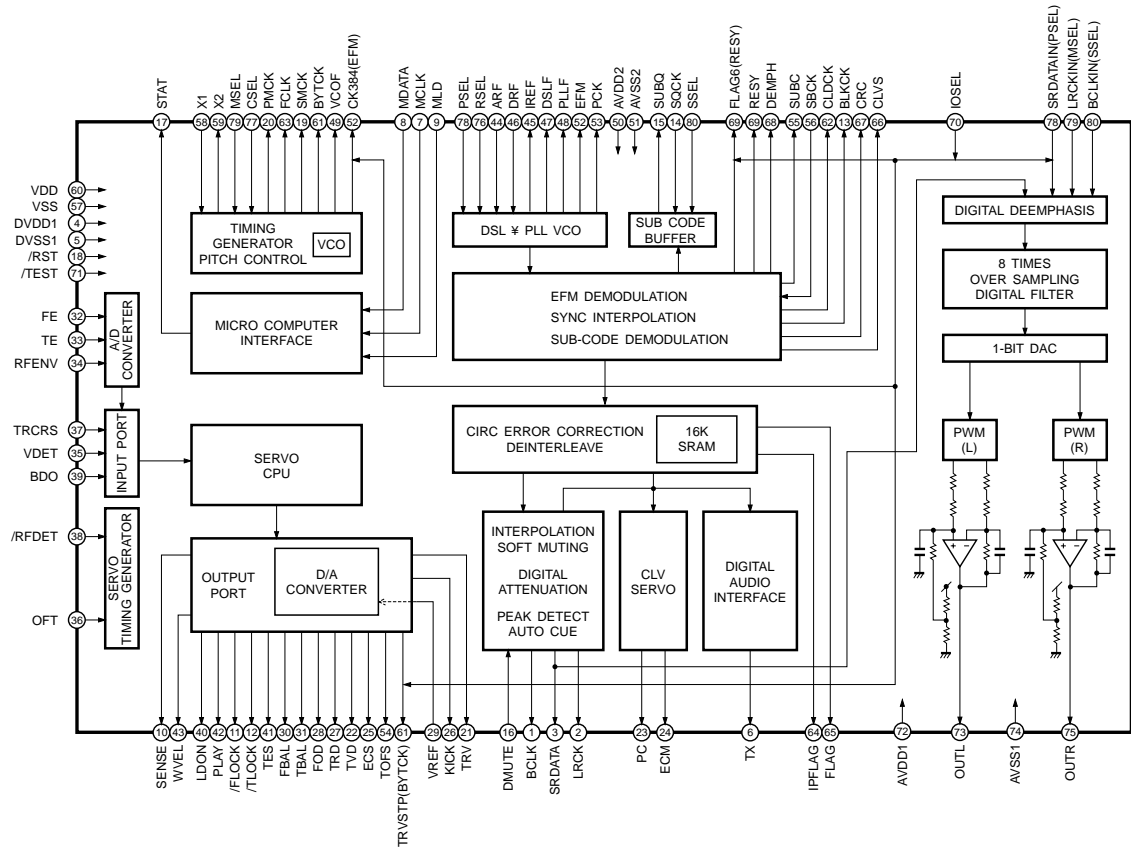
No.	Port	I/O	Name	Function
1	P96/ANEX1	I/O		Unused (GND)
2	P95/ANEX0	I/O		Unused (GND)
3	P94/DA1	I/O		Unused (GND)
4	P93/DA0	I/O		Open
5	P92/TB2in	I/O		Open
6	P91/TB1in	O	/MUTE	LINE MUTE
7	P90/TB0in	I/O		Open
8	BYTE	I	GND	
9	CNVss	I	GND	
10	P87/Xcin	I/O		Unused (GND)
11	P86/Xcout	I/O		Unused (GND)
12	/RESET	I	/RES	Reset input
13	Xout	O	XOUT	Ceramic lock 10MHz
14	Vss	I	GND	GND level input
15	Xin	I	XIN	Ceramic lock 10MHz
16	Vcc	I	VCC	Microprocessor power supply input
17	P85/NMI	I	PU	PU to Vcc
18	P84/INT2	I	DSTB	MD strobe input
19	P83/INT1	I	/PDN	Power failure detect (Power down)
20	P82/INT0	I/O		Unused (GND)
21	P81/TA4in	I/O		Unused (GND)
22	P80/TA4out	I/O		Unused (GND)
23	P77/TA3in	I/O		Unused (GND)
24	P76/TA3out	I/O		Unused (GND)
25	P75/TA2in	I/O		Unused (GND)
26	P74/TA2out	I/O		Unused (GND)
27	P73/TA1in	I/O		Unused (GND)
28	P72/TA1out	O	6.5/5V	MD unit power supply switching
29	P71/TA0in	I/O		Unused (GND)
30	P70/TA0out	I/O		Unused (GND)
31	P67/TxD1	O	SYSO	Data to MAIN CPU
32	P66/RxD1	I	SYSI	Data from MAIN CPU
33	P65/CLK1	I	SYSCK	System command clock
34	P64/CTS	I	SYSCTL	System command control

IC2 : M30622M8-xxxFP [P.C.B. MD]

Main System Microprocessor (MD CPU)

No.	Port	I/O	Name	Function
35	P63/TxD0	O	KDATA	MD key data
36	P62/RxD0	I	MDDATA	MD data input
37	P61/CLK0	O	DSCK	MD clock output
38	P60/CTS0,RTS0	O	MD-ST	MD start (MD-ON)
39	P57/RDY,CLKout	O	/MD-RES	MD reset output
40	P56/ALE	I/O		Unused (GND)
41	P55/HOLD	I	SEARCH	Unused (GND)
42	P54/HLDA	O	PDOWN	Used at MD unit power failure
43	P53/BCLK	I/O		Unused (GND)
44	P52/RD	I/O		Unused (GND)
45	P51/WRH,/BHE	I/O		Unused (GND)
46	P50/WRL,/WR	I/O		Unused (GND)
47	P47/CS3	I/O		Unused (GND)
48	P46/CS2	I	MODEL	Model input
49	P45/CS1	I	Ver	Destination input
50	P44/CS0	I	/LOADIN	H-L: DISC IN
51	P43/A19	I/O		Unused (GND)
52	P42/A18	I/O		Unused (GND)
53	P41/A17	I/O		Unused (GND)
54	P40/A16	I/O		Unused (GND)
55	P37/A15	I/O		Unused (GND)
56	P36/A14	I/O		Unused (GND)
57	P35/A13	I/O		Unused (GND)
58	P34/A12	I/O		Unused (GND)
59	P33/A11	I/O		Unused (GND)
60	P32/A10	I/O		Unused (GND)
61	P31/A9	I/O		Unused (GND)
62	Vcc	I	VCC	Microprocessor power supply input
63	P30/A8	I/O		Unused (GND)
64	Vss	I	GND	GND level input
65	P27/A7	I/O		Unused (GND)
66	P26/A6	I/O		Unused (GND)
67	P25/A5	I/O		Unused (GND)
68	P24/A4	I/O		Unused (GND)
69	P23/A3	I/O		Unused (GND)
70	P22/A2	I/O		Unused (GND)
71	P21/A1	I/O		Unused (GND)
72	P20/A0	I/O		Unused (GND)
73	P17/D15	I/O		Unused (GND)
74	P16/D14	I/O		Unused (GND)
75	P15/D13	I/O		Unused (GND)
76	P14/D12	I/O		Unused (GND)
77	P13/D11	I/O		Unused (GND)
78	P12/D10	I/O		Unused (GND)
79	P11/D9	I/O		Unused (GND)
80	P10/D8	I/O		Unused (GND)
81	P07/D7	I/O		Unused (GND)
82	P06/D6	I/O		Unused (GND)
83	P05/D5	I/O		Unused (GND)
84	P04/D4	I/O		Unused (GND)
85	P03/D3	I/O		Unused (GND)
86	P02/D2	I/O		Unused (GND)
87	P01/D1	I/O		Unused (GND)
88	P00/D0	I/O		Unused (GND)
89	P107/AN7	I/O		Unused (GND)
90	P106/AN6	I/O		Unused (GND)
91	P105/AN5	I/O		Unused (GND)
92	P104/AN4	I/O		Unused (GND)
93	P103/AN3	I/O		Unused (GND)
94	P102/AN2	I/O		Unused (GND)
95	P101/AN1	I/O		Unused (GND)
96	AVss	I	DGND	GND level input for AD
97	P100/AN0	I/O		Unused (GND)
98	Vref	I	VREF	Open
99	AVcc	I	ADVCC	Open
100	P97//ADTRG	I/O	DITMUTE	Mute output to DIT

IC5 : MN662741RPB1 [P.C.B. CD]
Signal Processor & Controller



Pin No.	Name	I/O	Function
1	BCLK	O	Bit clock output for SRDATA
2	LRCK	O	L/R identification signal output H : L-ch audio data L : R-ch audio data
3	SRDATA	O	Serial data output
4	DVDD1	I	Power supply for digital circuits (+5)
5	DVSS1	I	GND for digital circuits
6	TX	O	Digital audio interface output signal
7	MCLK	I	Microcomputer command clock signal input (Latches the data at a rising edge)
8	MDATA	I	Microcomputer command data input
9	MLD	I	Microcomputer command load signal input L : Load
10	SENSE	O	Sense signal output (OFT, FESL, NACEND, NAJEND, SFG, NWTEND)
11	FLOCK	O	Focus servo pull-in signal (L : Pull-in status)
12	TLOCK	O	Tracking servo pull-in signal (L : Pull-in status)
13	BLKCK	O	Sub-code block clock signal (f _{BLKCK} = 75Hz)
14	SQCK	I	External clock input for sub-code Q register
15	SUBQ	O	Sub-code Q data output
16	DMUTE	I	Muting input H : Mute
17	STAT	O	Status signal (CRC, CUE, CLVS, TTSTOP, FCLV, SQOK, FLAG6, SENSE, FLOCK, TLOCK)
18	RST	I	Reset input (Reset when being at L for 472 ns or longer at IOSEL = L) L : Reset
19	SMCK	O	8.4672MHz clock signal output at MSEL = H 4.2336MHz clock signal output at MSEL = L (NC)
20	PMCK	O	88.2kHz clock signal output (NC)
21	TRV	O	Traverse (Feed) forced feed output 3-State
22	TVD	O	Traverse (Feed) drive output
23	PC	O	Spindle motor ON signal L : ON (NC)
24	ECM	O	Spindle motor drive signal (Forced mode output) 3-State
25	ECS	O	Spindle motor drive signal (Servo error signal output)
26	KICK	O	Kick pulse output 3-State
27	TRD	O	Tracking drive output
28	FOD	O	Focus drive output

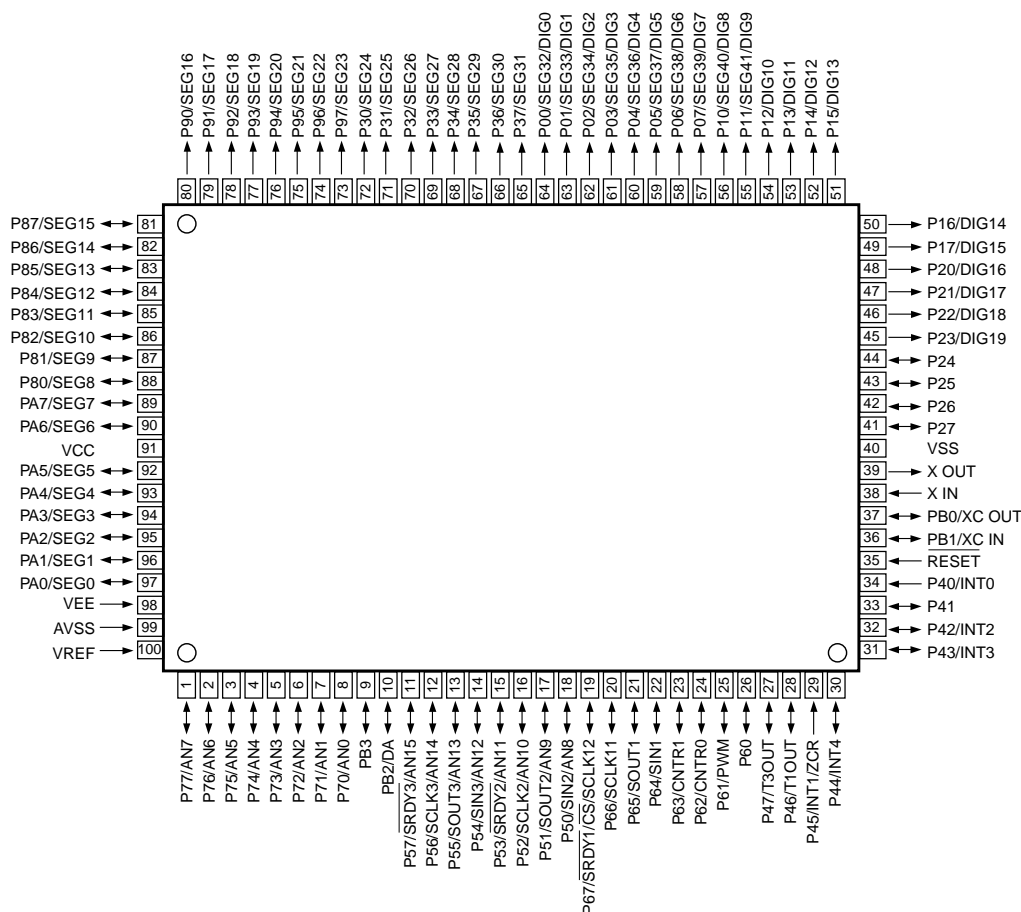
IC5 : MN662741RPB1 [P.C.B. CD]

Signal Processor & Controller

Pin No.	Name	I/O	Function
29	VREF	I	Reference voltage for D/A output section (TVD, ECS, TRD, FOD, FBAL, TBAL, TOFS)
30	FBAL	O	Focus balance adjustment output
31	TBAL	O	Tracking balance adjustment output
32	FE	I	Focus error signal input (Analog input)
33	TE	I	Tracking error signal input (Analog input)
34	RFENV	I	RF envelope signal input (Analog input)
35	VDET	I	Vibration detection signal input H : Detect
36	OFT	I	Off track signal input H : Off track
37	TRCRS	I	Track cross signal input
38	RFDET	I	RF detection signal input L : Detect
39	BDO	I	Drop out signal input H : Drop out
40	LDON	O	Laser ON signal output H : ON
41	TES	O	Tracking error shunt signal output H : Shunt
42	PLAY	O	Play signal output H : PLAY (NC)
43	WVEL	O	Double speed status signal output L : Double speed (NC)
44	ARF	I	RF signal input
45	IREF	I	Reference current input pin
46	DRF	I	Bias pin for DSL (NC)
47	DSL F	I/O	DSL loop filter pin
48	PLL F	I/O	PLL loop filter pin
49	VCO F	I/O	VCO loop filter pin (NC)
50	AVDD2	I	Power supply for analog circuits (For DSL, PLL, A/D input blocks, and D/A output blocks) (+5)
51	AVSS2	I	GND for analog circuits (For DSL, PLL, A/D input blocks, and D/A output blocks) (GND)
52	EFM	O	EFM signal output At IOSEL = H : EFM signal output At IOSEL = L : 16.9344 MHz clock output (*1)
53	PCK	O	PLL extraction clock output (f _{PCK} = 4.32MHz) (NC)
54	TOFS	O	Tracking offset adjustment output (NC)
55	SUBC	O	Sub-code serial output
56	SBCK	I	Clock input for sub-code serial output (With pull-up resistor)
57	VSS	I	GND for oscillation circuit
58	X1	I	Crystal oscillation circuit input pin (f = 16.9344MHz, 33.8688MHz)
59	X2	O	Crystal oscillation circuit output pin (f = 16.9344MHz, 33.8688MHz)
60	VDD	I	Power supply for oscillation circuit (+5)
61	BYTCK	O	At IOSEL = H : Byte clock signal output At IOSEL = L : Traverse stop signal output H : STOP mode (*1)
62	CLDCK	O	Sub-code frame clock signal output (f _{CLDCK} = 7.35kHz)
63	FCLK	O	Crystal frame clock signal output (f _{FCLK} = 7.35kHz) (NC)
64	IPFLAG	O	Interpolation flag signal output H : Interpolation
65	FLAG	O	Flag signal output (NC)
66	CLVS	O	Spindle servo phase synchronous status signal out H : CLV L : Rough servo (NC)
67	CRC	O	Sub-code CRC check result output H : OK L : NG (NC)
68	DEMPH	O	De-emphasis detection signal output H : ON (NC)
69	RESY	O	At IOSEL = H : Frame resynchronizing signal RESY output H : Synchronous L : Asynchronous (*1) At IOSEL = L : Error correction, and deinterleave RAM address reset signal FLAG6 output L : Address reset generated
70	IOSEL	I	Mode selector pin (*1)
71	TEST	I	Test pin (Normal : H) (+5)
72	AVDD1	I	Power supply for analog circuits (For audio output section) (Commonly used for L-ch and R-ch)
73	OUTL	O	L-ch audio output
74	AVSS1	I	GND for analog circuits (For audio output section) (Commonly used for L-ch and R-ch)
75	OUTR	O	R-ch audio output
76	RSEL	I	RF signal polarity specification pin When the bright level is "H", RSEL = H When the bright level is "L", RSEL = L
77	CSEL	I	Crystal oscillation frequency specification pin (H : Crystal oscillation frequency = 33.8688 MHz, L : Crystal oscillation frequency = 16.9344 MHz)
78	PSEL	I	At IOSEL = H : Test pin (Normally L) At IOSEL = L : SRDATA input (*1)
79	MSEL	I	At IOSEL = H : SMCK pin output frequency selector pin H : SMCK = 8.4672MHz, L : SMCK = 4.2336MHz At IOSEL = L : LRCK input H : L-ch data, L : R-ch data SMCK = Fixed at 4.2336 MHz (*1)
80	SSEL	I	At IOSEL = H : SUBQ pin output mode selector pin H : Q-code buffer working mode (*1) At IOSEL = L : BCLK input Q-code buffer mode fixed

*1 These models used "L".

IC11 : M38199EF [P.C.B. CD]
8 bit μ -COM (CD CPU)



IC11 : M38199EF [P.C.B. CD]

8 bit μ -COM (CD CPU)

Pin No.	Port	Name	I/O	Function
28	P46			Open
29	INT1	BLKCK	I	Q-code read OK signal
30	INT4			Open
31	INT3			Open
32	INT2	/HINT	I	Decoder interrupt signal (Unused)
33	P41	DEPH	O	De-emphasis control (Unused)
34	INT0	/CSINT	I	System μ -COM data automatic transfer initialize, start signal
35	/RESET	RESET	I	Reset
36	XCIN	XCIN		Open
37	XCOU	XCOU		Open
38	XIN	XIN	I	8 MHz (MAIN CLOCK)
39	XOUT	XOUT	O	8 MHz (MAIN CLOCK)
40	VSS	GND		GND
41	P27	K3	I	Not used
42	P26	K2	I	Not used
43	P25	K1	I	Not used
44	P24	K0	I	Not used
45	P23	KD3	O	Not used
46	P22	KD2	O	Not used
47	P21	KD1	O	Not used
48	P20	KD0	O	Not used
49	P17		O	Not used
50	P16		O	Not used
51	P15		O	Not used
52	P14		O	Not used
53	P13		O	Not used
54	P12	/DECRST	O	Decoder reset (Unused)
55	P11	DRV	O	Servo driver on
56	P10	FCSG	O	Focus gain high (NC)
57	P07	TROP	O	Tray open control signal (implied clamper control)
58	P06	TRCL	O	Tray close control signal
59	P05	TBL +	O	Tray table revolution
60	P04	TBL -	O	Tray table brake
61	P03			Open
62	P02	/MNRST	O	Servo LSI reset signal
63	P01		O	Open
64	P00	/MUTE	O	Line mute
65	P37	/PON	O	Servo LSI power ON control
66	P36		O	Open
67	P35	DMUTE	O	Digital mute
68	P34	/MLD	O	Microprocessor command store request
69	P33	CMDSEL	O	Serial 2 \rightarrow μ -COM command
70	P32	QSEL	O	Serial 2 \rightarrow Q-code read
71	P31	DOSEL	O	Decoder serial I/O out select (Unused)
72	P30	/TSPD	O	Tray table revolution speed control (H : Low speed)
73	P97	VMUTE	O	Video mute (Unused)
74	P96		O	Not used
75	P95		O	Not used
76	P94		O	Not used
77	P93		O	Not used
78	P92		O	Not used
79	P91		O	Not used
80	P90		O	Not used
81	P87		O	Not used
82	P86		O	Not used
83	P85		O	Not used
84	P84		O	Not used

IC11 : M38199EF [P.C.B. CD]**8 bit μ -COM (CD CPU)**

Pin No.	Port	Name	I/O	Function
85	P83		O	Not used
86	P82		O	Not used
87	P81		O	Not used
88	P80		O	Not used
89	PA7		O	Not used
90	PA6		O	Not used
91	VCC	VCC		+5V
92	PA5		O	Not used
93	PA4		O	Not used
94	PA3		O	Not used
95	PA2		O	Not used
96	PA1		O	Not used
97	PA0		O	Not used
98	VEE	VEE		GND
99	AVSS	AVSS		GND (VSS)
100	VREF	VREF		+5V (VCC)

IC8 : M38199EF [P.C.B. INPUT]**8 bit μ -COM (SYSTEM CPU)**

No.	Port	Name	I/O	Function
1	AN7	MSEL	I	MODEL/PRO LOGIC MODE DETECT (A-D)
2	AN6	SPEIN	I	SPECTRUM ANALYZER (BA3835F) IN (A-D)
3	AN5	DSEL	I	MARKET SELECT IN (A-D)
4	AN4	KEY4	I	KEY 4 IN (A-D)
5	AN3	KEY3	I	KEY 3 IN (A-D)
6	AN2	KEY2	I	KEY 2 IN (A-D)
7	AN1	KEY1	I	KEY 1 IN (A-D)
8	AN0	KEY0	I	KEY 0 IN (A-D)
9	PB3			OPEN
10	DA	FAN	O	FAN CONTROL OUT
11	AN15	THER	I	AMP THERMAL DETECT
12	SCLK3	FLCLK	O	SERIAL CLOCK FOR FL DRIVER M66004
13	SO3	FLDATA	O	SERIAL OUT FOR FL DRIVER M66004
14	SI3			OPEN
15	AN11	VPRT	I	ABNORMAL VOLTAGE DETECT
16	SCLK2	TUCLK	O	LC72131/LC72720/M65853FP/LA2787/LV1017/LC75393/LC7536Y CLK OUT
17	SO2	TUDO	O	LC72131/LC72720/M65853FP/LA2787/LV1017/LC75393/LC7536Y DATA OUT
18	SI2	TUDATA	I	LC72131/LC72720 DATA IN
19	P67	/STAD	I	STATION IN (TUNER) [L : STATION AVAILABLE]
20	SCLK1	SYSCK	O	SYSTEM COMMAND CLOCK
21	SO1	SYSO	O	SYSTEM COMMAND OUT
22	SI1	SYSI	I	SYSTEM COMMAND IN
23	P63	TUMUTE	O	TUNER MUTE [H : MUTE ON]
24	P62	/AMP MUTE	O	AMP MUTE [L : MUTE ON]
25	P61	CDCE	O	SYSTEM COMMUNICATION CD CE
26	P60	CDRES	O	CD RESET
27	P47	MDCE	O	SYSTEM COMMUNICATION MD CE

IC8 : M38199EF [P.C.B. INPUT]

8 bit μ -COM (SYSTEM CPU)

No.	Port	Name	I/O	Function
28	P46	MDRES	O	MD RESET
29	INT1	ACIN	I	POWER DOWN AC PULSE IN
30	INT4	PDN	O	MD POWER DOWN
31	INT3			OPEN
32	INT2	REMO	I	REMOTE CONTROL SIGNAL IN
33	P41	STEIN	I	TUNER STEREO/MONO DETECT
34	INT0			OPEN
35	/RESET	RESET	I	RESET
36	XCIN	XCIN	I	32.768 kHz IN (SUB CLOCK)
37	XCOUT	XCOUT	O	32.768 kHz OUT (SUB CLOCK)
38	XIN	XIN	I	8 MHz IN (MAIN CLOCK)
39	XOUT	XOUT	O	8 MHz OUT (MAIN CLOCK)
40	VSS	GND	O	GND
41	P27	SPEA	O	SPECTRUM ANALYZER (BA3835F) A OUT
42	P26	SPEB	O	SPECTRUM ANALYZER (BA3835F) B OUT
43	P25	SPEC	O	SPECTRUM ANALYZER (BA3835F) C OUT
44	P24	SPESEL	O	SPECTRUM ANALYZER (BA3835F) SEL OUT
45	P23	DLCE	O	LA2787/LV1017 CE
46	P22	KALATCH	O	KARAOKE IC M65853 LATCH
47	P21	FLRES	O	FL DRIVER RESET
48	P20	FLCE	O	FL DRIVER CE
49	P17	TUCE	O	LC72131/LC72720/LC75393 CE
50	P16	STLED	O	STANDBY LED ON [H : LED ON]
51	P15	TMLED	O	TIMER LED ON [H : LED ON]
52	P14	/BC	O	PRO LOGIC IC CONTROL-BC
53	P13	TEST0	O	TEST PORT
54	P12	TEST1	O	TEST PORT
55	P11	DSEL0	O	MD DIGITAL INPUT SELECT
56	P10	DSEL1	O	MD DIGITAL INPUT SELECT
57	P07	PRON	O	POWER RELAY CONTROL [H : ON]
58	P06	SRON	O	SPEAKER RELAY CONTROL [H : ON]
59	P05	/SMUTE	O	SUB WOOFER MUTE [L : MUTE ON]
60	P04	/A	O	PRO LOGIC IC CONTROL-A [H : ON]
61	P03	/YMA	O	Y MERSION ON [L : ON]
62	P02	IN1B	O	4052 INPUT SELECT
63	P01	IN1A	O	4052 INPUT SELECT
64	P00	IN2A	O	4052 INPUT SELECT
65	P37	IN2B	O	4052 INPUT SELECT
66	P36	RECA	O	4066 CONTROL
67	P35	RECB	O	4066 CONTROL
68	P34	VSEL0	O	LA7956 INPUT SELECT
69	P33	VSEL1	O	LA7956 INPUT SELECT
70	P32	VCR	O	VCR REC INHIBIT [H : INHIBIT]
71	P31	PBMUTE	O	DECK PLAYBACK MUTE
72	P30	RMUTE	O	DECK REC MUTE
73	P97	REC	O	DECK AMP REC
74	P96	BIAS	O	DECK BIAS ON
75	P95	DOLBY	O	DOLBY ON
76	P94	TPEQ	O	TAPE EQUALIZER SELECT [H : 120 μ]
77	P93	SOL	O	DECK SOLENOID ON
78	P92	CPM	O	DECK CAPSTAN MOTOR ON
79	P91	CLOSE	O	TAPE LOADING MOTOR CLOSE
80	P90	OPEN	O	TAPE LOADING MOTOR OPEN
81	P87	ENVA	I	VR ENCODER A
82	P86	ENVB	I	VR ENCODER B
83	P85	ENMA	I	MD ENCODER A
84	P84	ENMB	I	MD ENCODER B

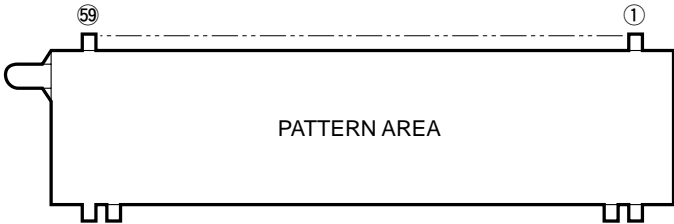
IC8 : M38199EF [P.C.B. INPUT]

8 bit μ -COM (SYSTEM CPU)

No.	Port	Name	I/O	Function
85	P83	/HP	I	HEAD PHONE DETECT [L : HP DETECT]
86	P82	MIC	I	MIC DETECT
87	P81	CASS	I	CASSETTE IN DETECT
88	P80	PLSW	I	DECK MECHA PLAY POSITION DETECT
89	PA7	CRO2	I	CrO2 (70 μ s) POSITION DETECT
90	PA6	/IPRT	I	AMP OVER CURRENT DC VOLTAGE DETECT [L : ABNORMAL DETECT]
91	VCC	+5V		+5V
92	PA5	CLSW	I	DECK CLOSE SW
93	PA4	RECINHF	I	REC INHIBIT FORWARD (SIDE-A)
94	PA3	RECINHR	I	REC INHIBIT REVERSE (SIDE-B)
95	PA2	OPSW	I	DECK OPEN SW
96	PA1	REEL	I	REEL MOTOR PULSE DETECT
97	PA0	MUSIC	I	TAPE MUSIC SENSOR
98	VEE	VEE		GND
99	AVSS	AVSS		GND
100	VREF	VREF		+5V

■ DISPLAY DATA

● V801 : 16-BT-63GK (V2959000)



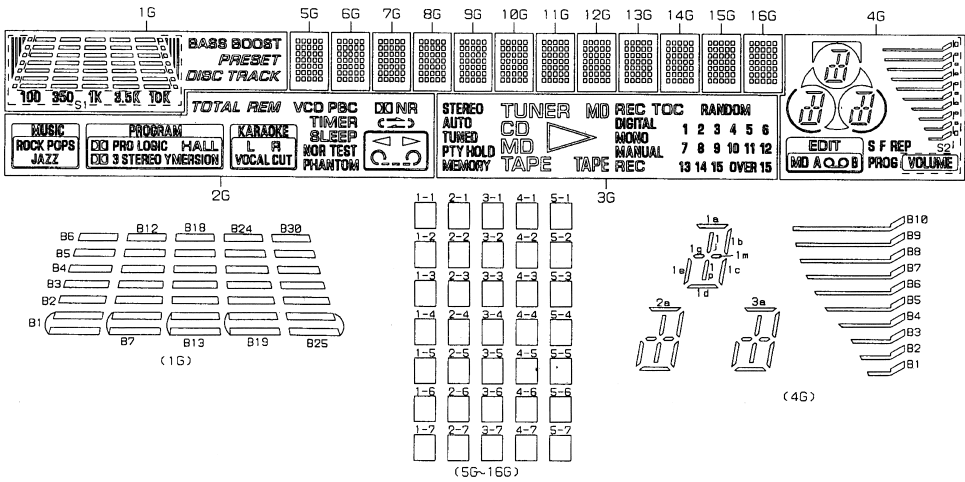
● PIN CONNECTION

Pin No.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30
Connection	F1	F1	NP	NP	P35	P34	P33	P32	P31	P30	P29	P28	P27	P26	P25	P24	P23	P22	P21	P20	P19	P18	P17	P16	P15	P14	P13	P12	P11	P10

Pin No.	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	
Connection	P9	P8	P7	P6	P5	P4	P3	P2	P1	16G	15G	14G	13G	12G	11G	10G	9G	8G	7G	6G	5G	4G	3G	2G	1G	NP	NP	F2	F2	

Note 1) F1, F2 Filament 3) NC No Connection 5) 1G~16G Grid
2) NP No Pin 4) P1~P35 Datum Line

● GRID ASSIGNMENT



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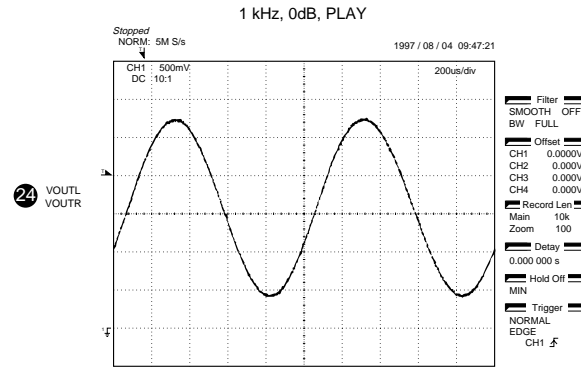
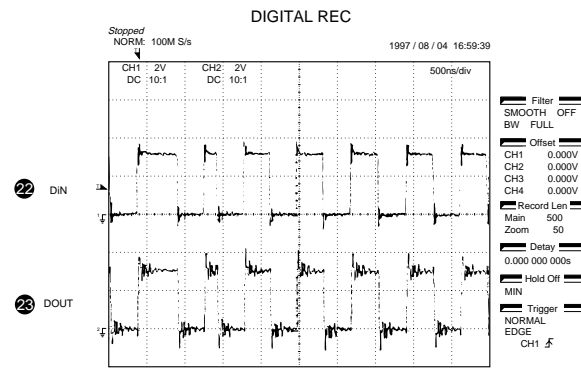
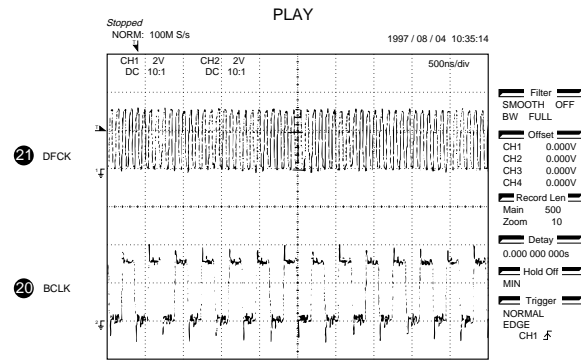
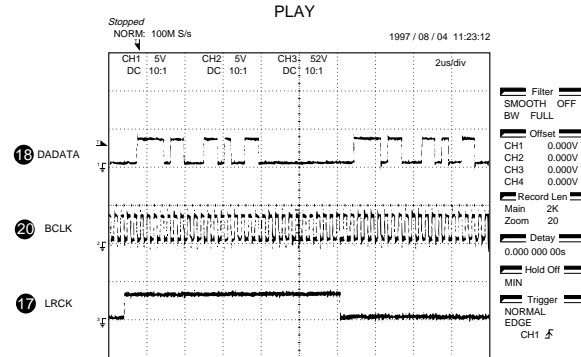
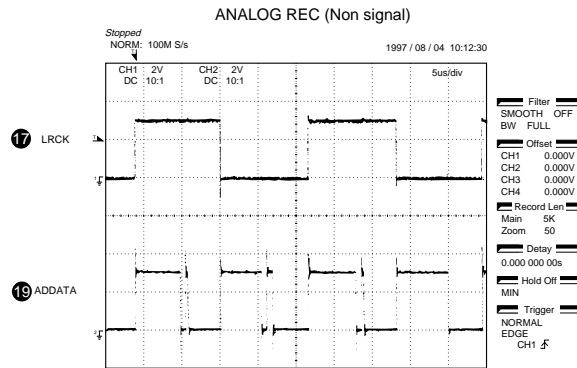
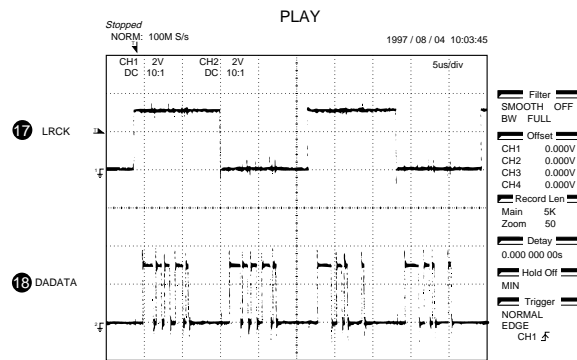
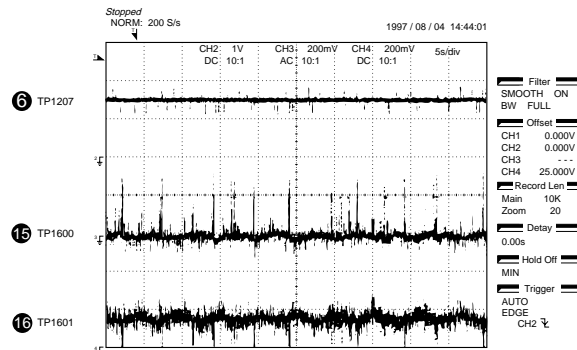
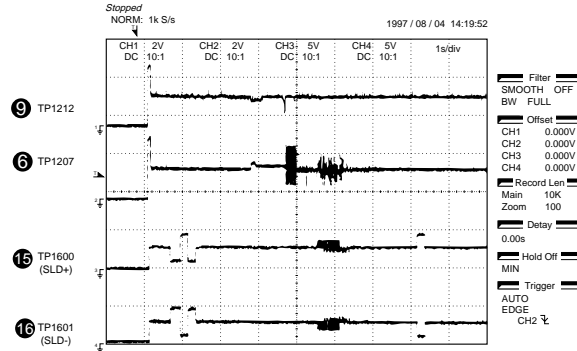
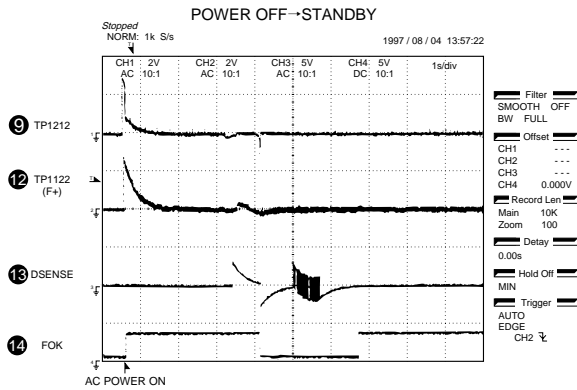
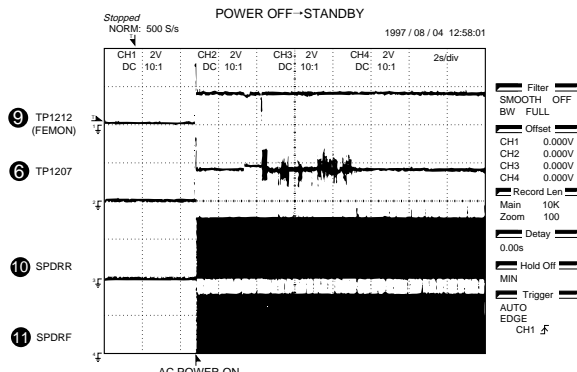
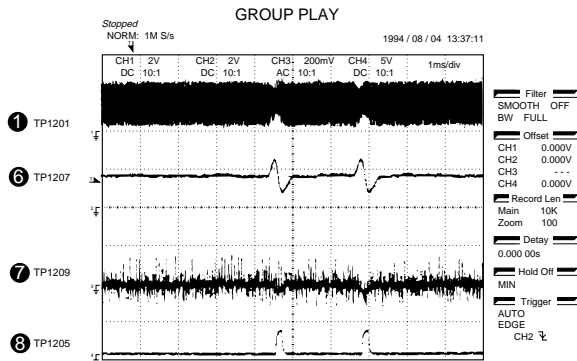
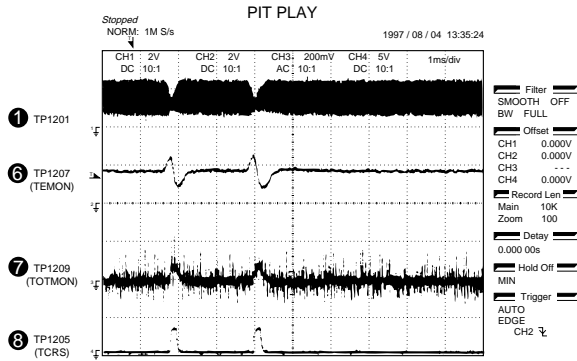
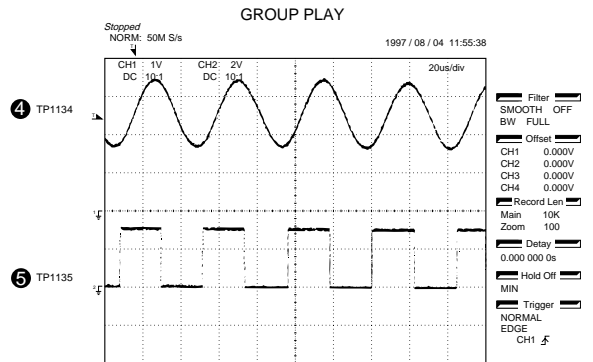
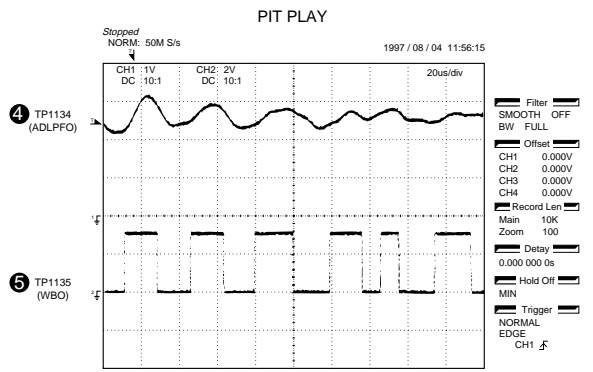
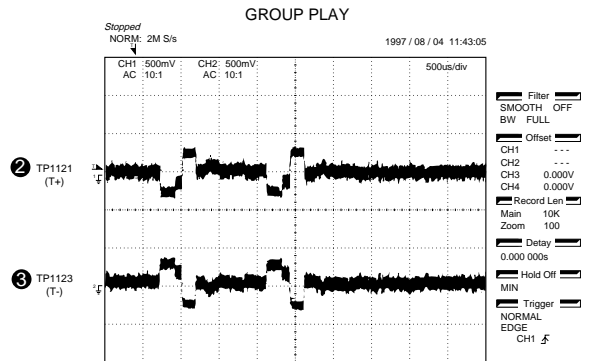
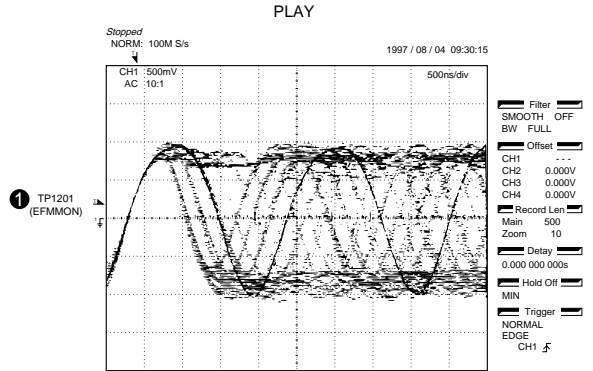


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GX-900

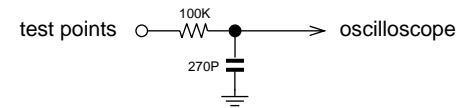
■ MD TEST POINT WAVEFORM



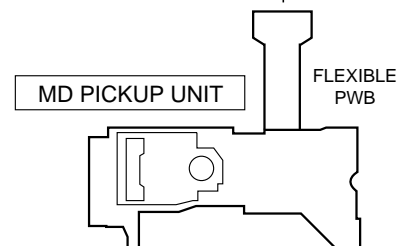
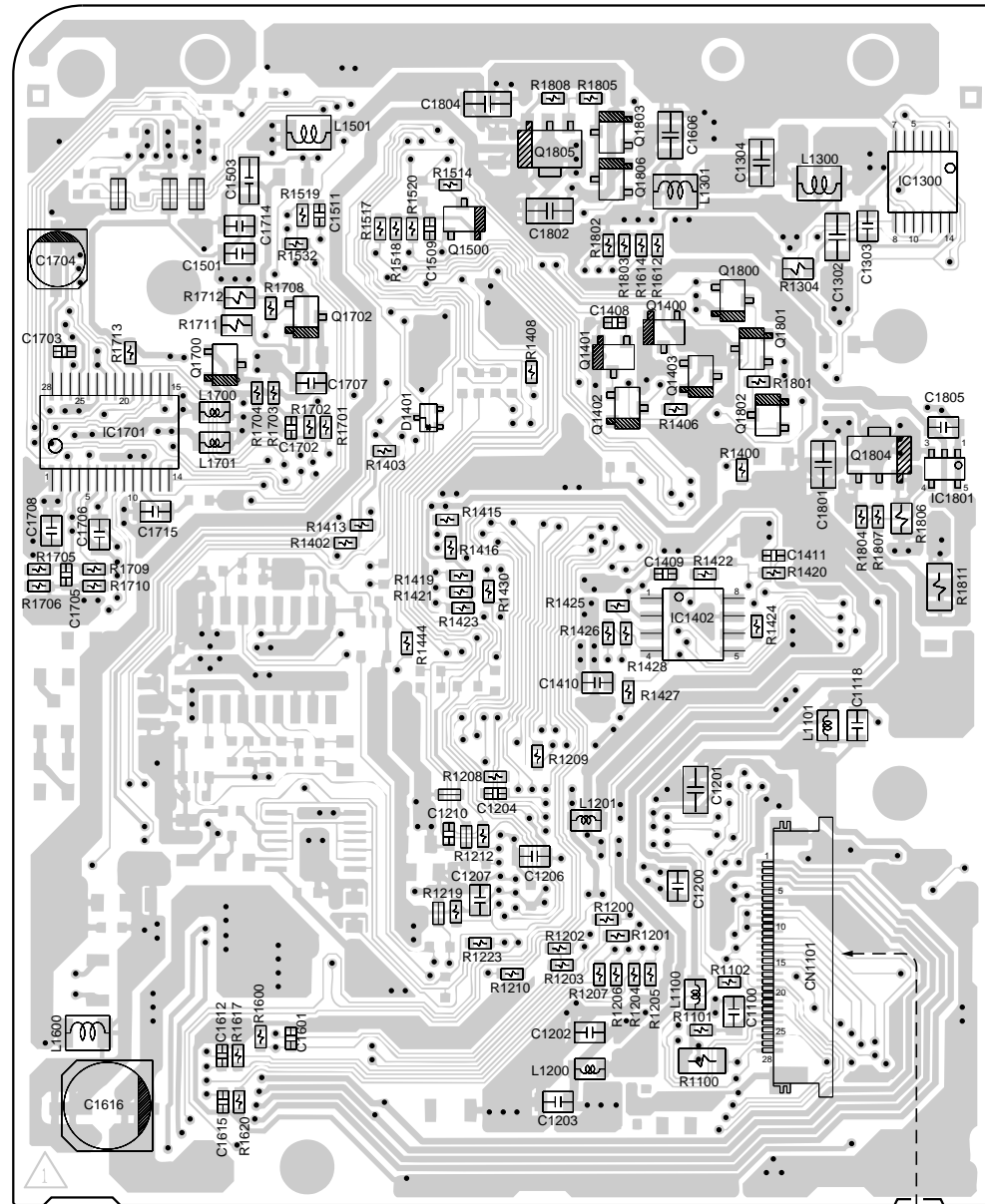
■ PRINTED CIRCUIT BOARD (Foil side)

Note : ⑥ ~ ⑨

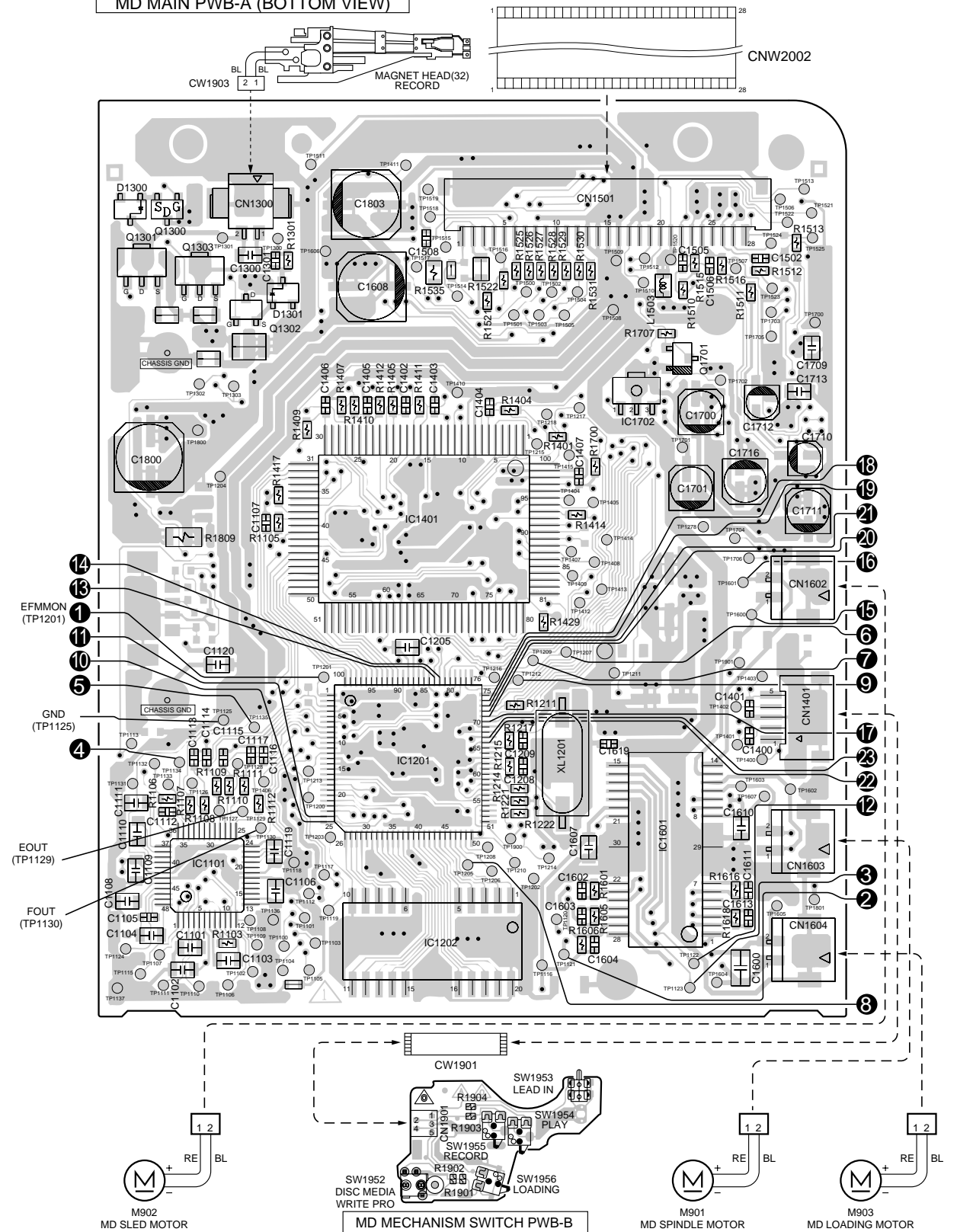
Connect an oscilloscope to the test points (6 ~ 9) through a filter as shown below.



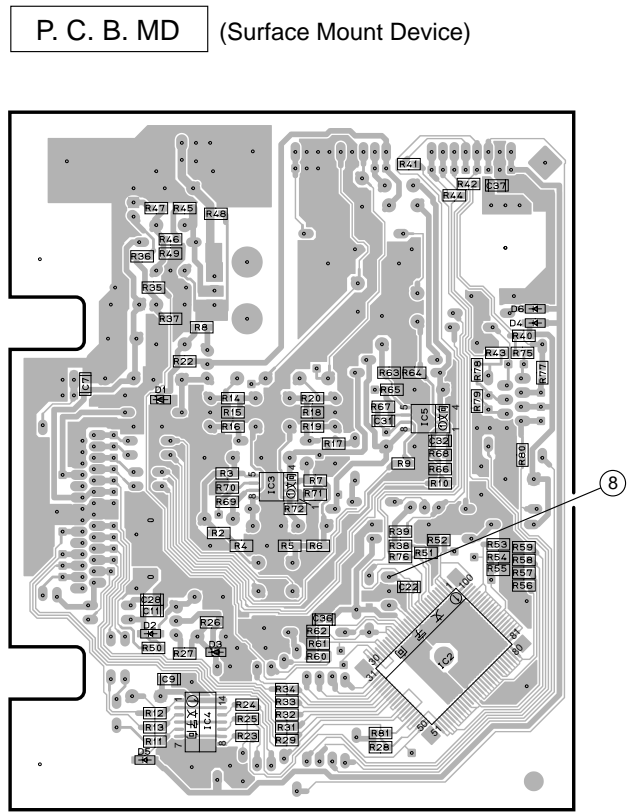
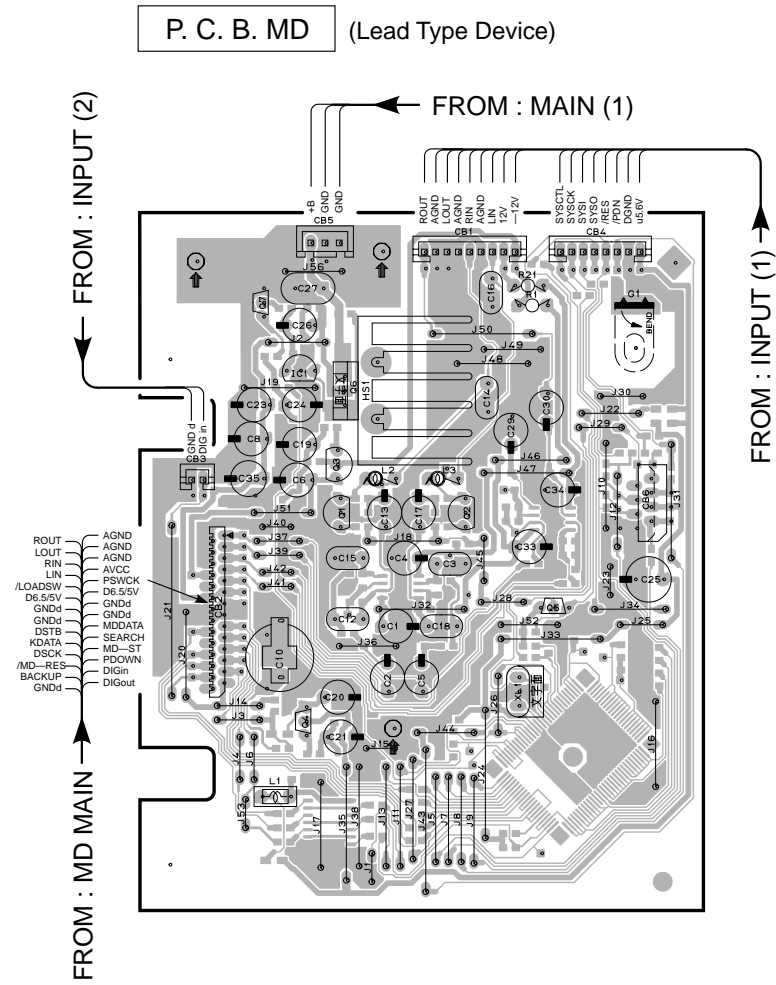
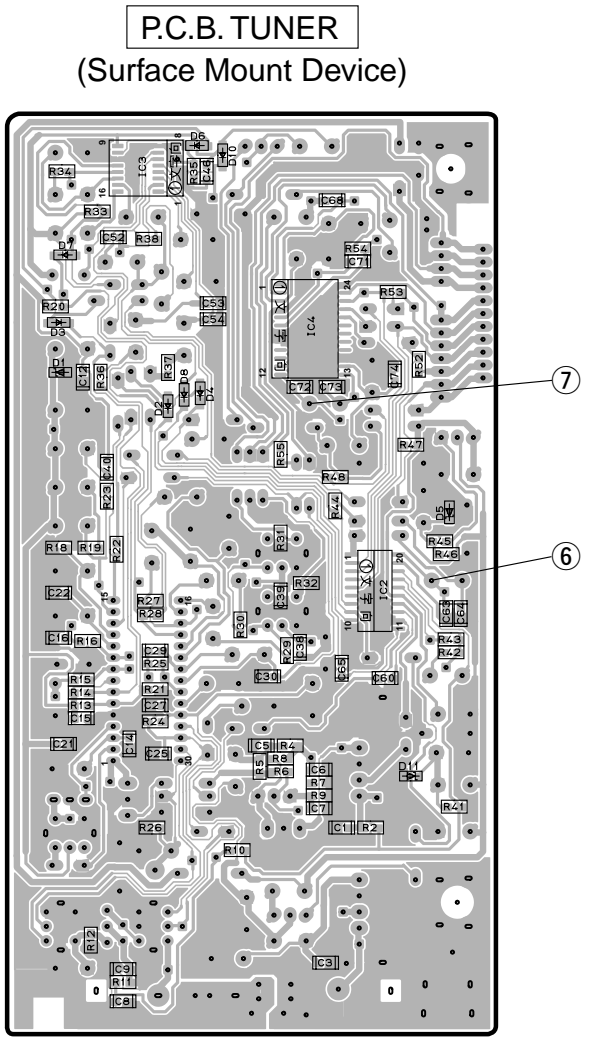
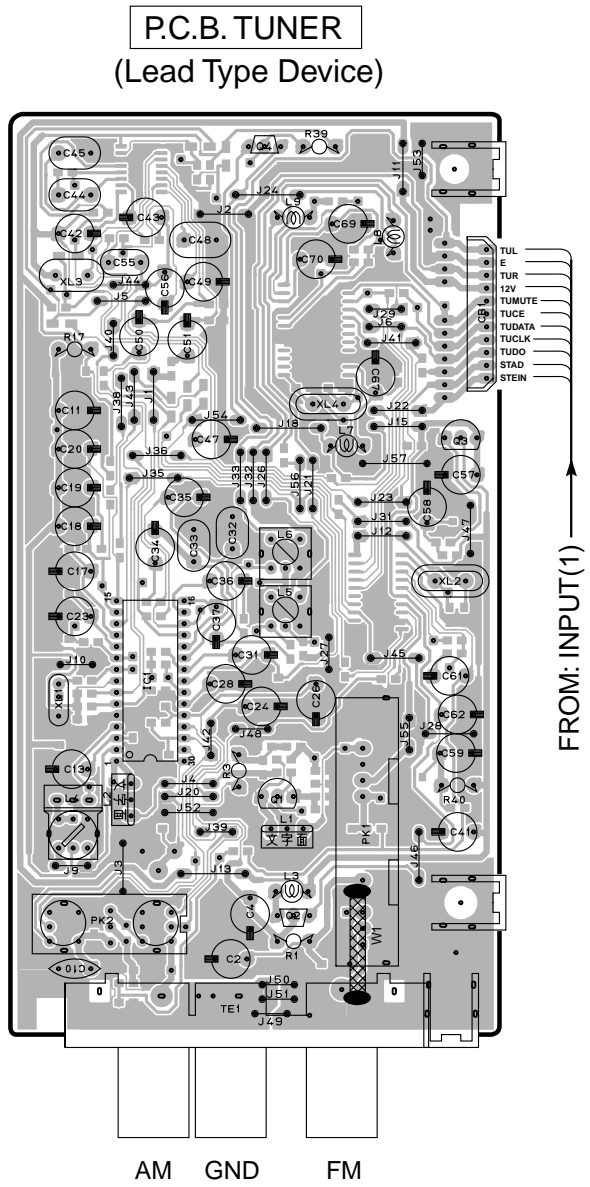
MD MAIN PWB-A (TOP VIEW)



MD MAIN PWB-A (BOTTOM VIEW)



PRINTED CIRCUIT BOARD (Foil side)

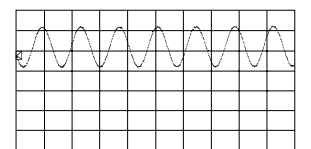


CIRCUIT CHANGES BY MARKET.

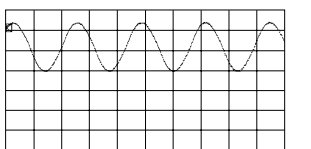
	U, C, R, T, L, A	B, G	J
X3	X	X	O
X4	X	O	X
IC3	X	X	O
IC4	X	O	X
Q4	X	X	O
D6 ~ 8, 10	X	X	O
L7 ~ 9	X	O	X
C68, 71 ~ 74	X	O	X
C46, 52 ~ 54	X	X	O
C29	O	O	X
C42 ~ 51, 55, 56	X	X	O
C67, 69, 70	X	O	X
R33 ~ 38	X	X	O
R54	X	O	X
R25	O	O	X
R39	X	X	O
J21	X	O	X
J1, 40, 44	X	X	O

O : USED
X : NOT USED

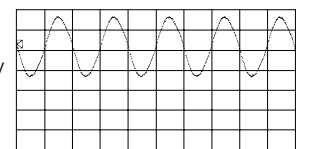
Point ⑥ (Pin20 of IC2)
V : 2V/div H : 0.1 μsec/div
DC range 1 : 1 probe



Point ⑦ (Pin12 of IC4)
V : 2V/div H : 0.1 μsec/div
DC range 1 : 1 probe



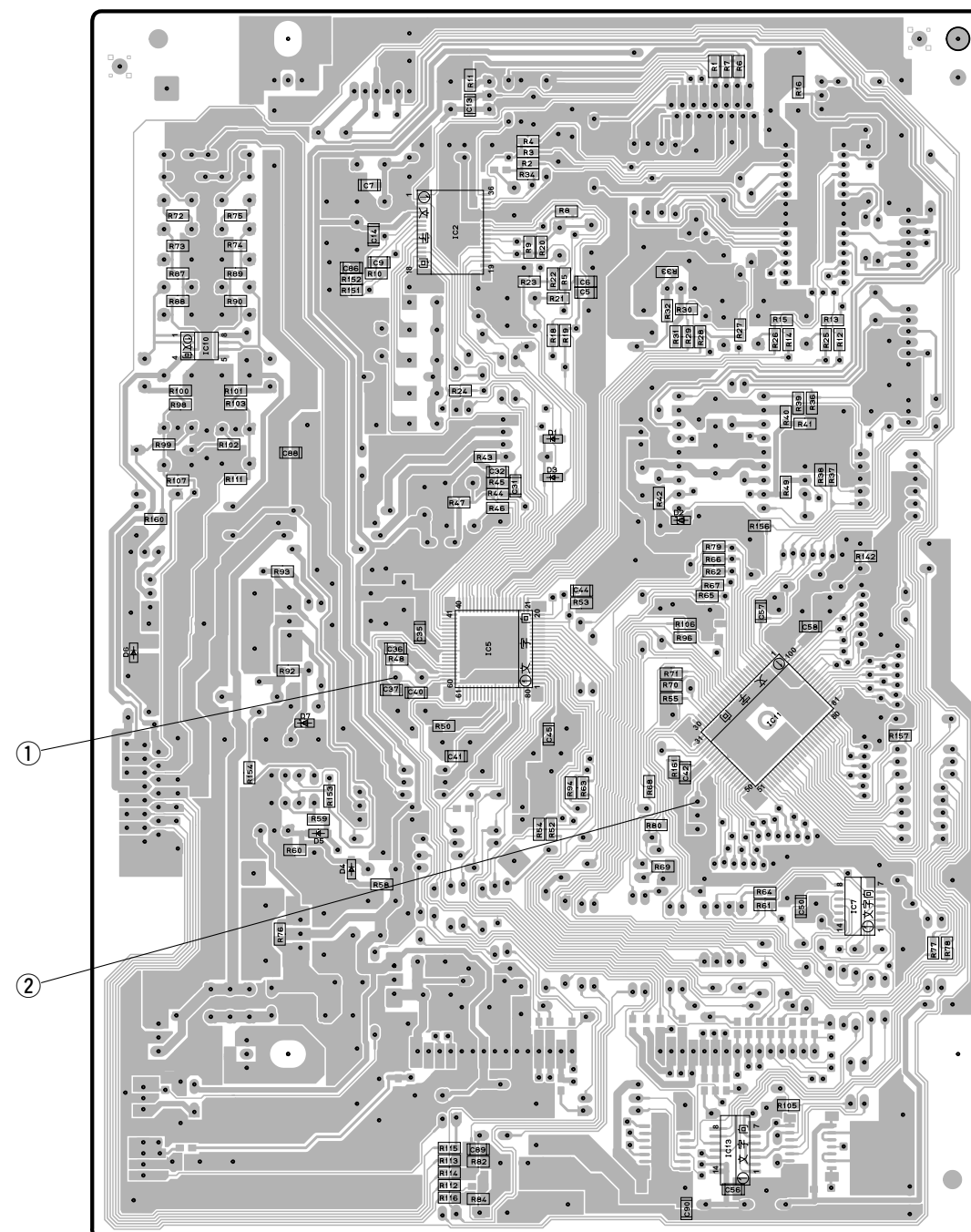
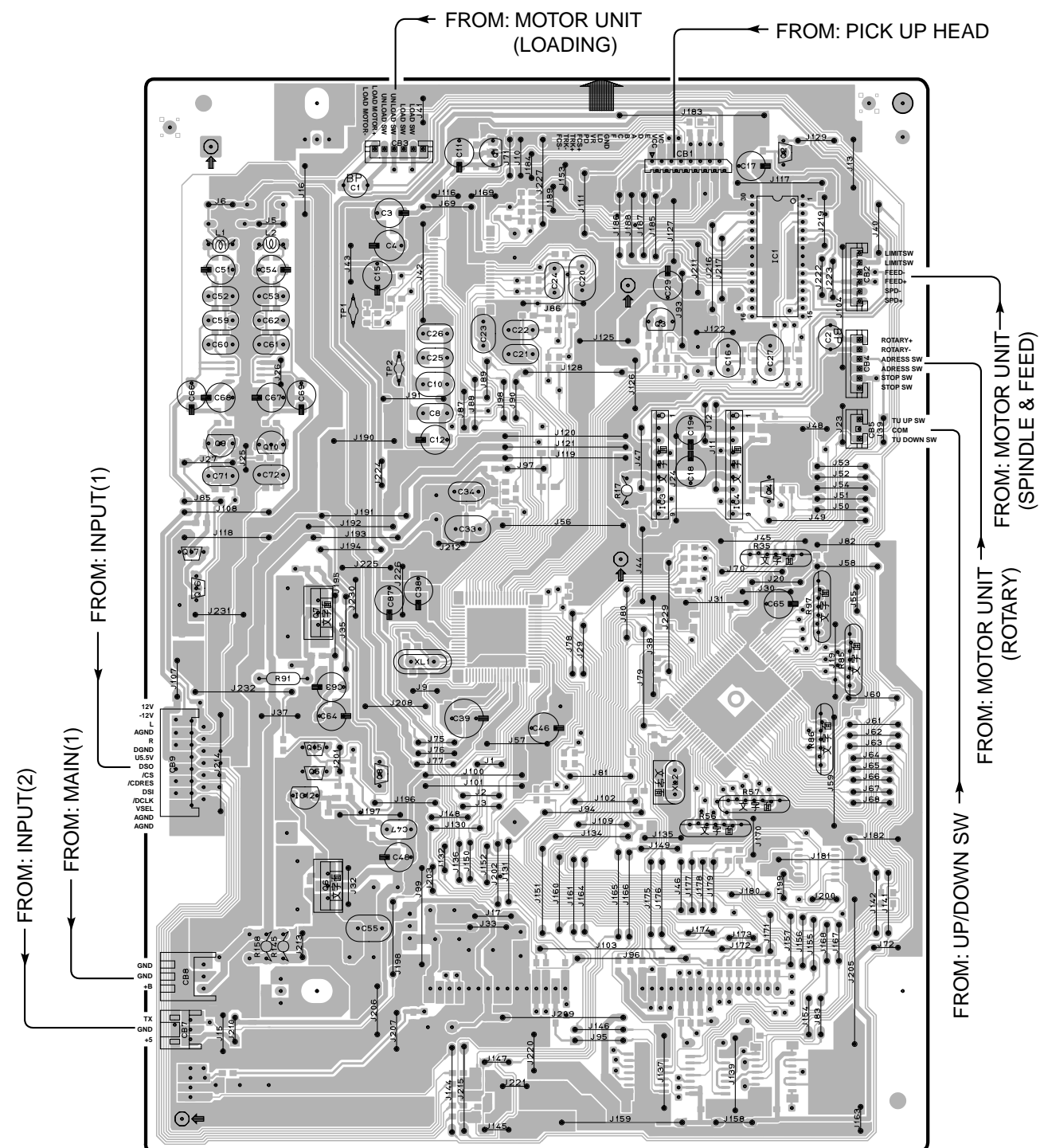
Point ⑧ (Pin13 of IC2)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



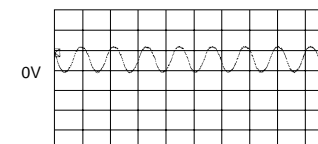
PRINTED CIRCUIT BOARD (Foil side)

P.C.B. CD (Lead Type Device)

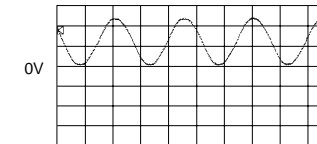
P.C.B. CD (Surface Mount Device)



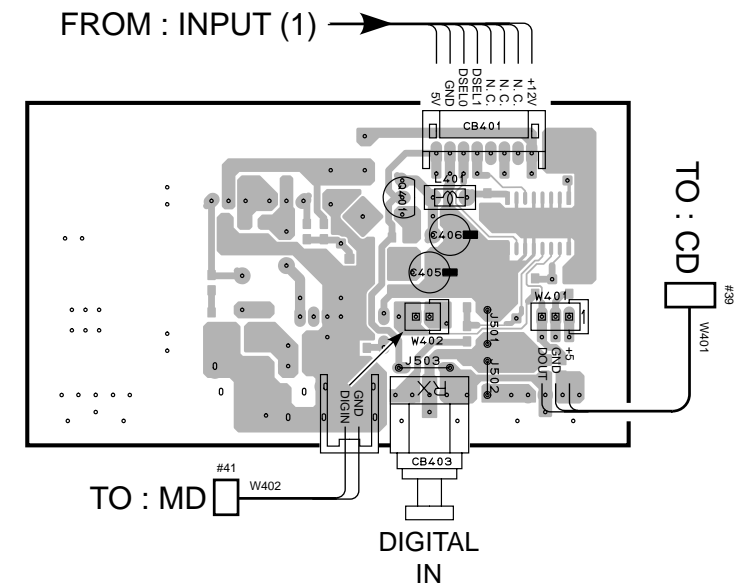
Point ① (Pin59 of IC5)
V : 5V/div H : 50 nsec/div
DC range 1 : 1 probe



Point ② (Pin39 of IC11)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



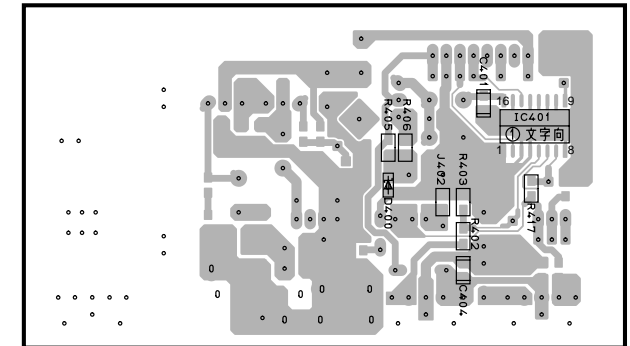
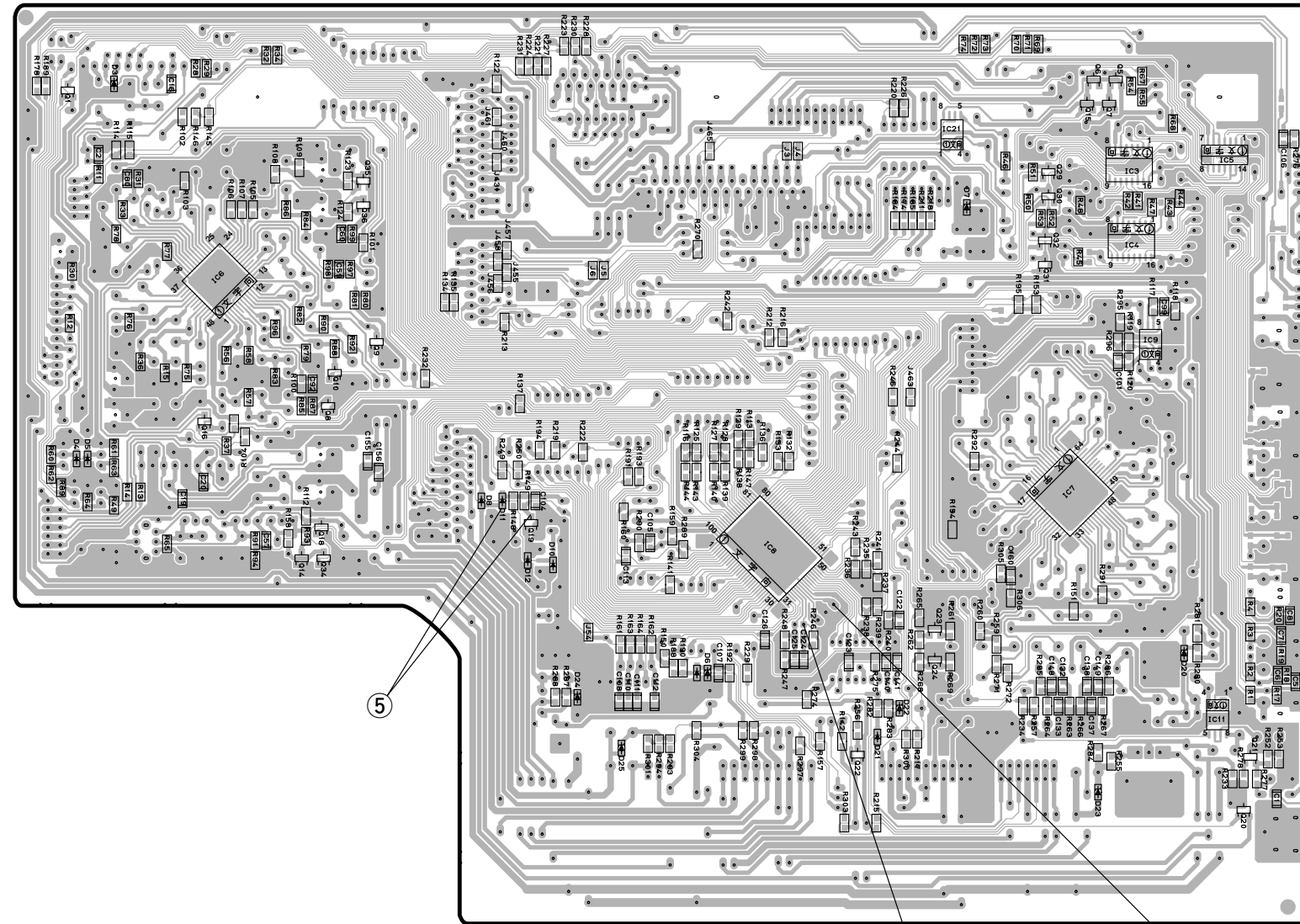
P. C. B. INPUT (2)	(Lead Type Device)
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■ PRINTED CIRCUIT BOARD (Foil side)

P.C.B. INPUT (1)	(Surface Mount Device)
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P. C. B. INPUT (2)	(Surface Mount Device)
----------------------	------------------------



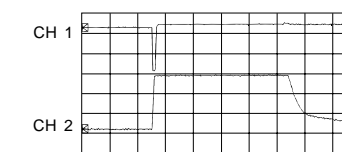
Point ⑤

CH1 : Collector of Q19
CH2 : Anode of D11

V : 2V/div (CH1)
V : 2V/div (CH2)

H : 0.5 sec/div DC range 1 : 1 probe

(This waveform is not available by pushing the power switch ON and OFF.)

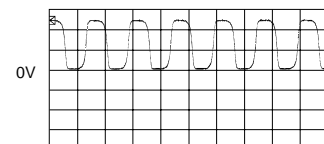


With the POWER ON, disconnect the A/C power cord. Reconnect the A/C power cord and the above waveforms will start.

Disconnect the power cord from the AC outlet.

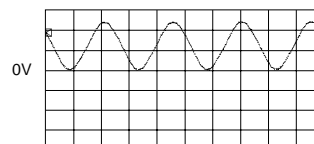
Point ③ (Pin37 of IC8)

V : 2V/div H : 20 μ sec/div
DC range 1 : 1 probe



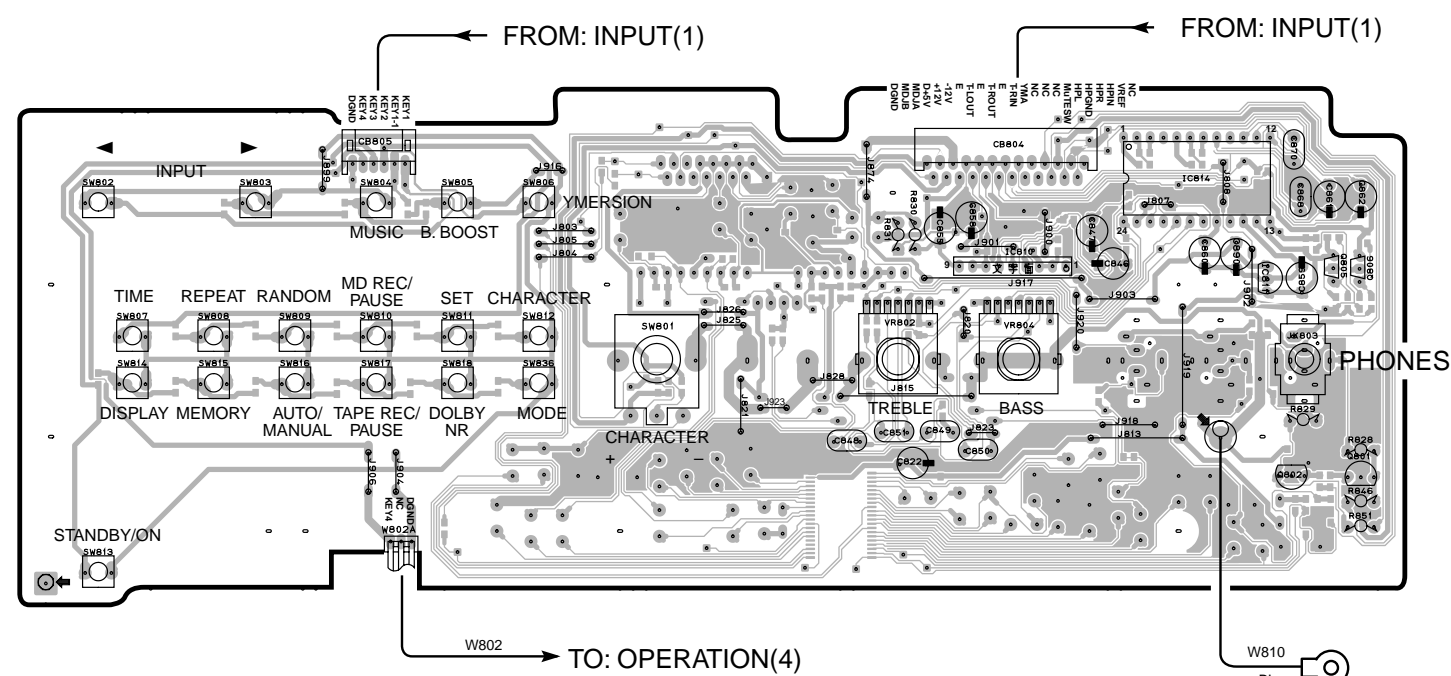
Point ④ (Pin39 of IC8)

V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe

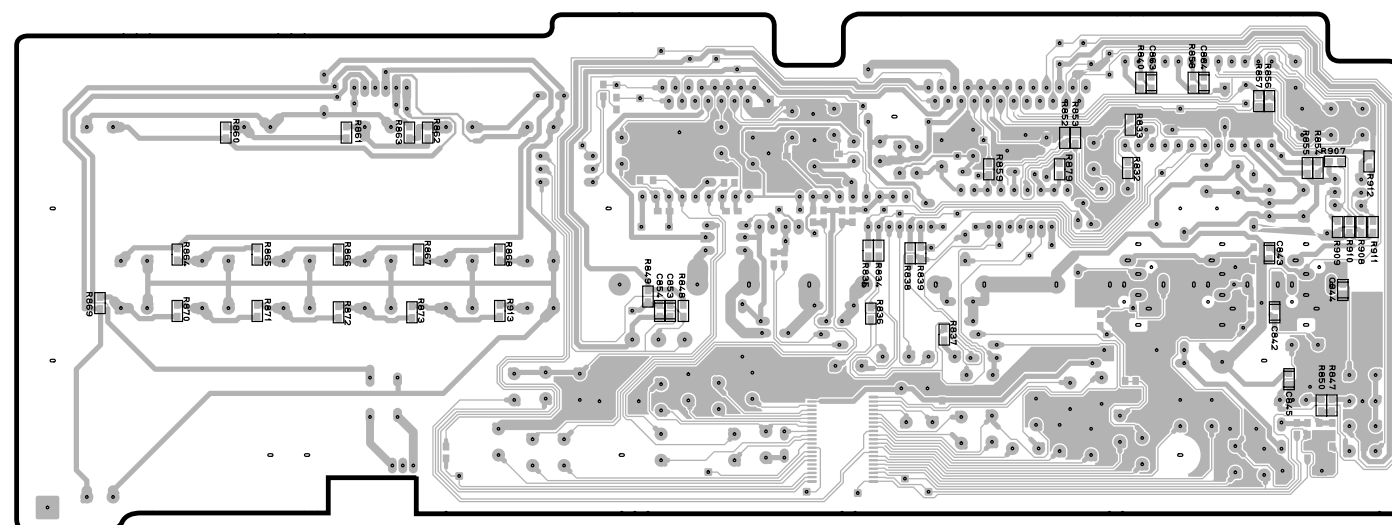


■ PRINTED CIRCUIT BOARD (Foil side)

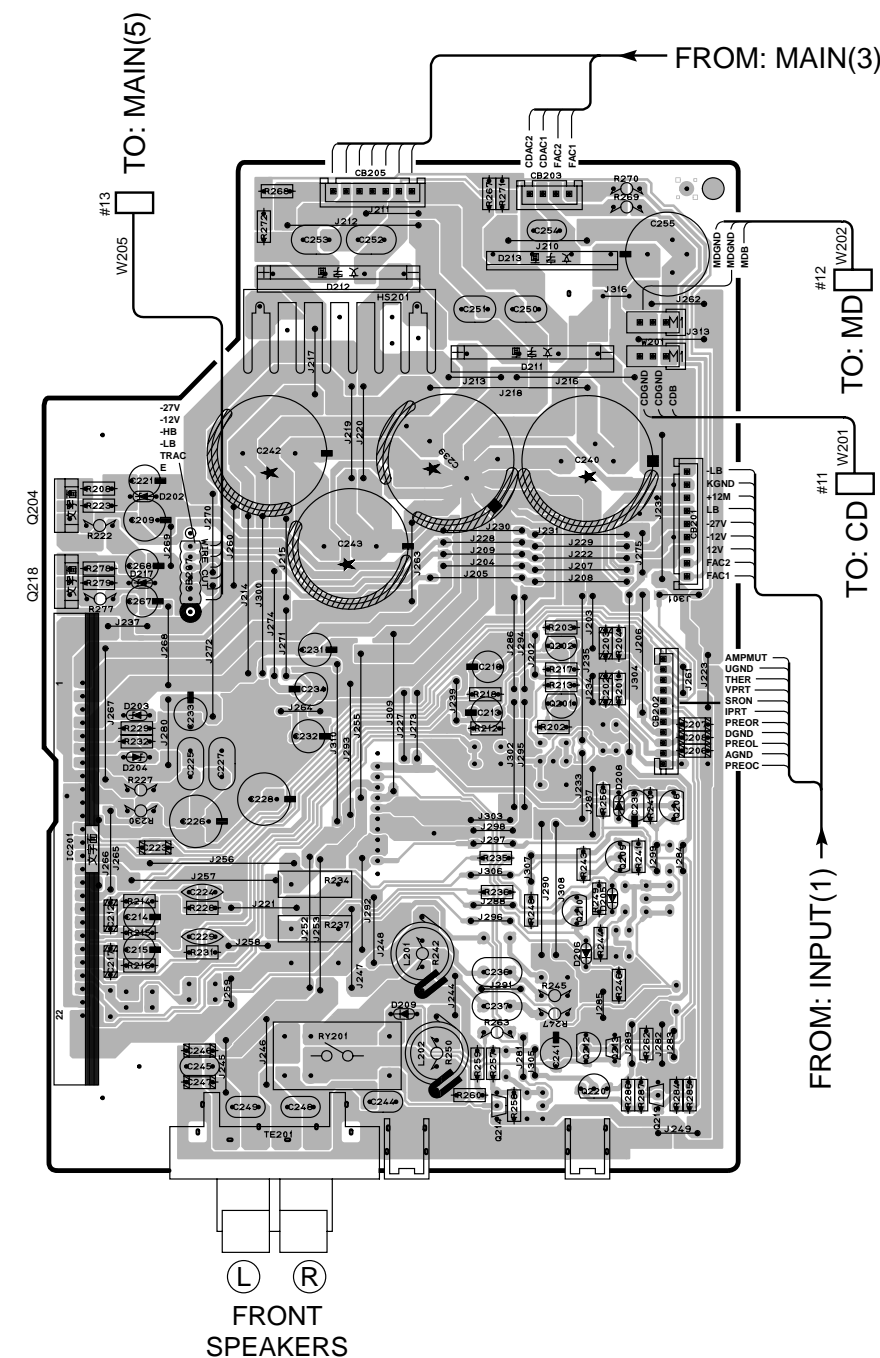
P.C.B. OPERATION(3) (Lead Type Device)



P.C.B. OPERATION(3) (Surface Mount Device)

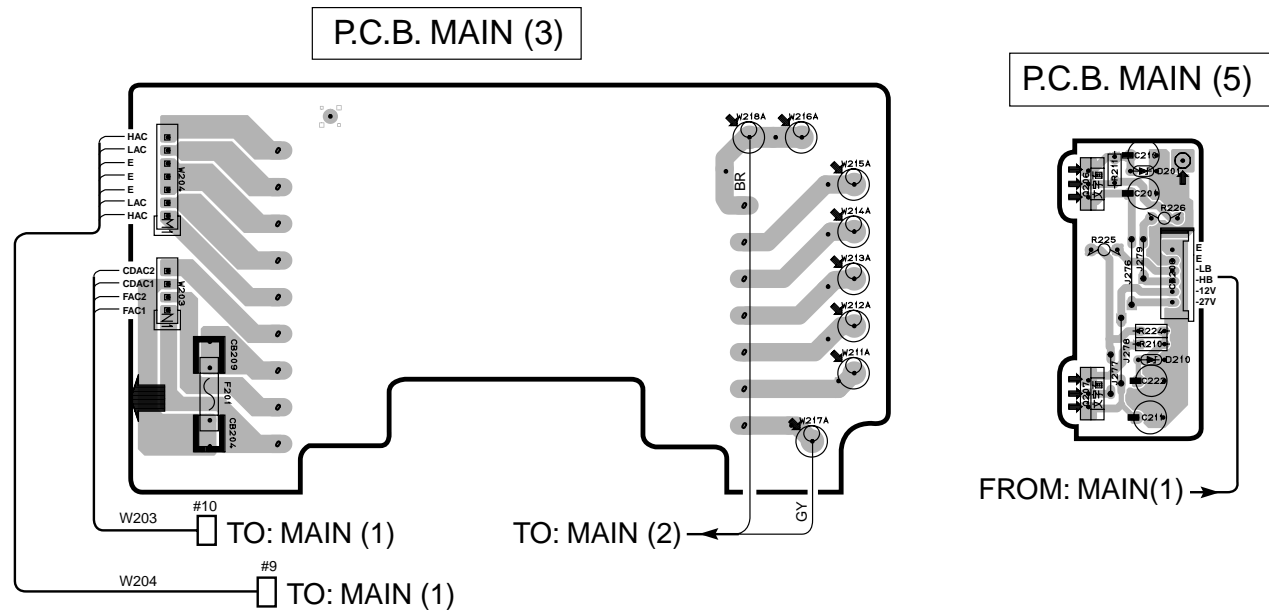
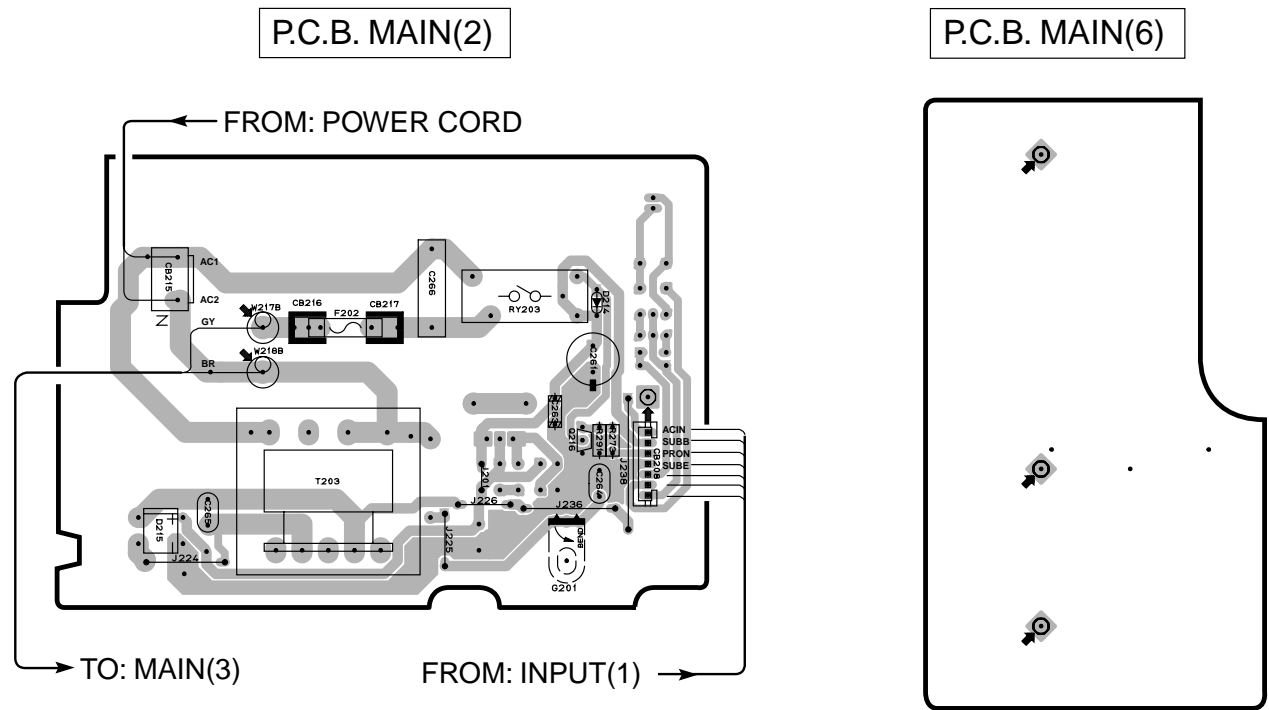


P.C.B. MAIN(1)



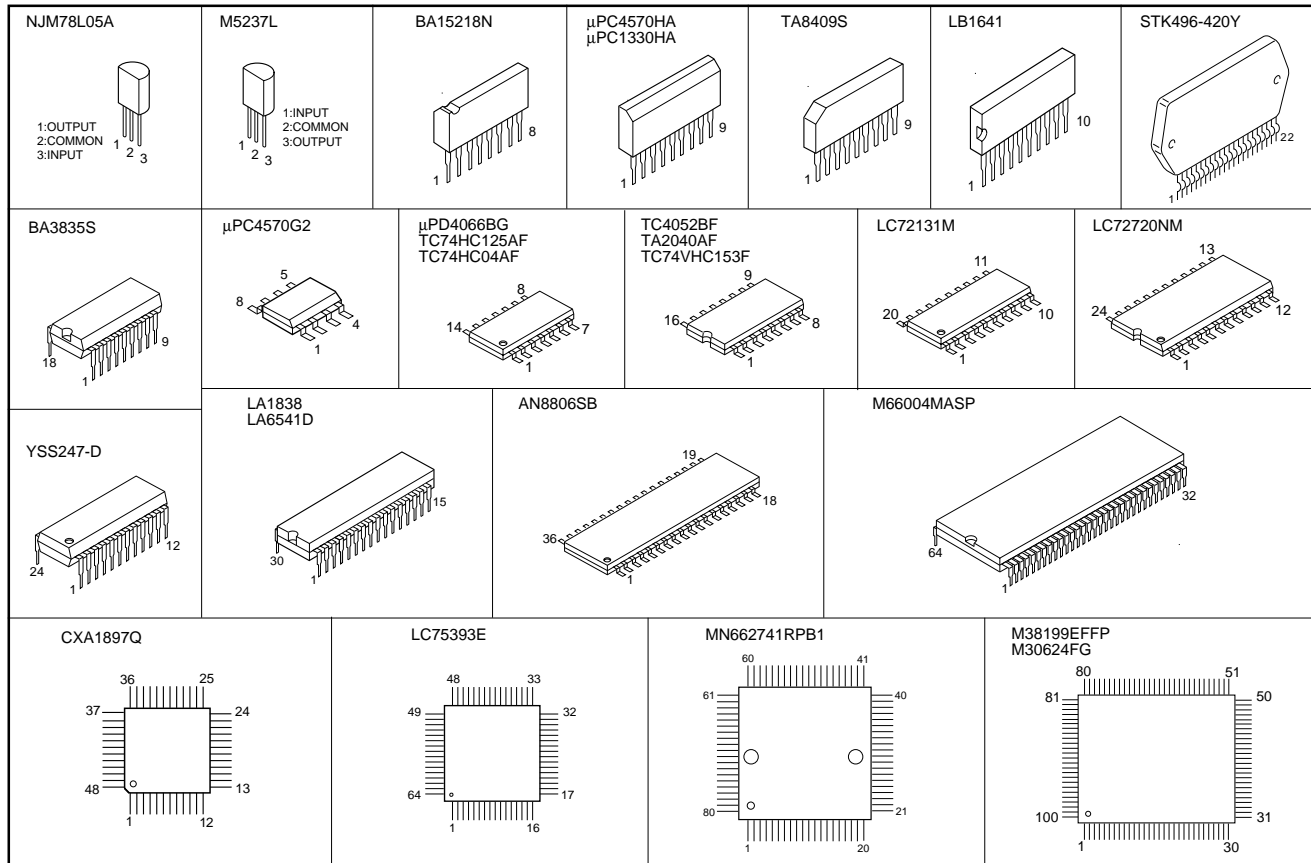
GX-900

PRINTED CIRCUIT BOARD (Foil side)

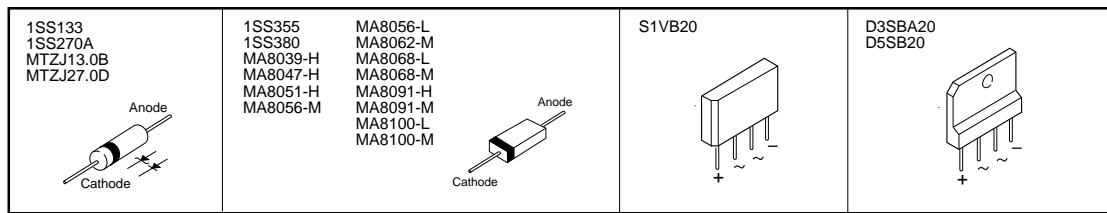


PIN CONNECTION DIAGRAM

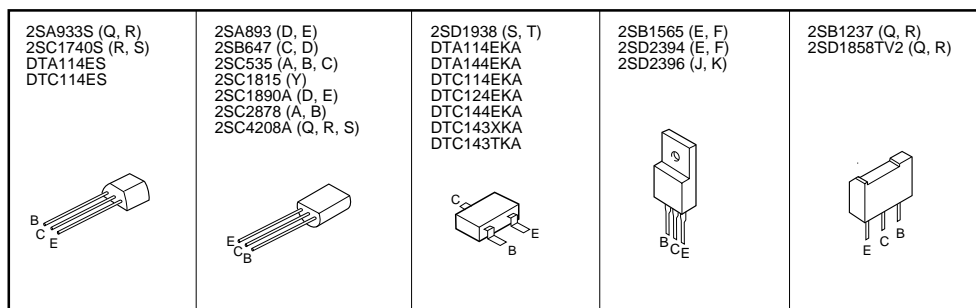
ICs



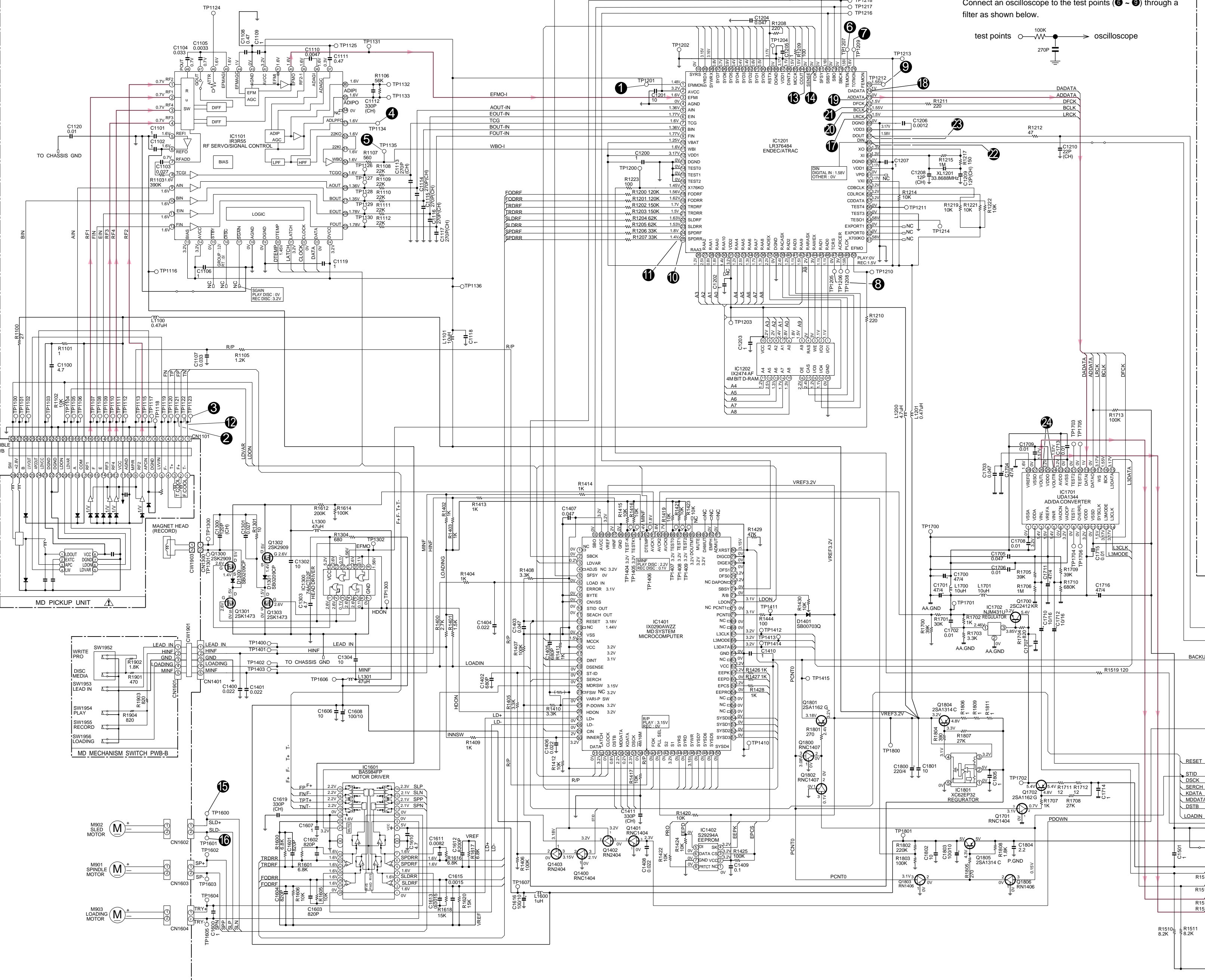
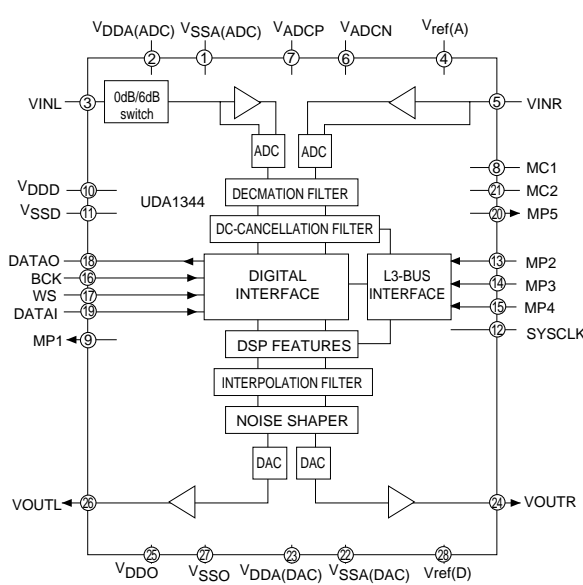
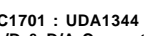
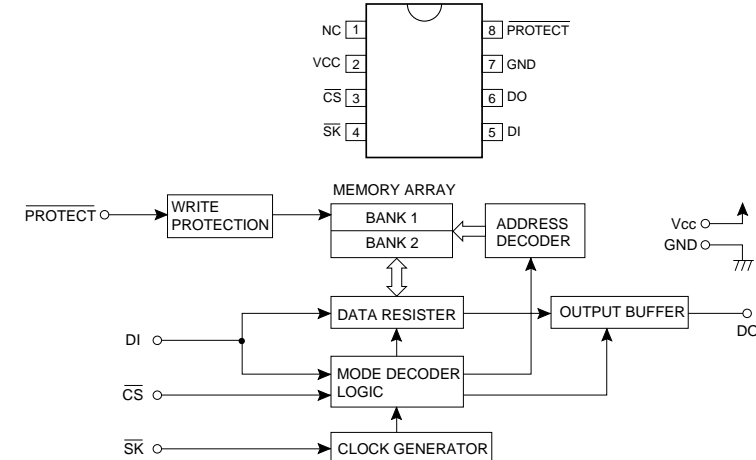
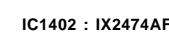
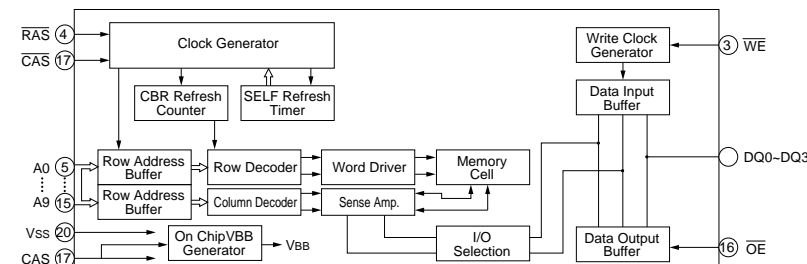
Diodes



Transistors




❶ to ❷❹ : TEST POINT WAVEFORMS (See page 66 ~ 67)

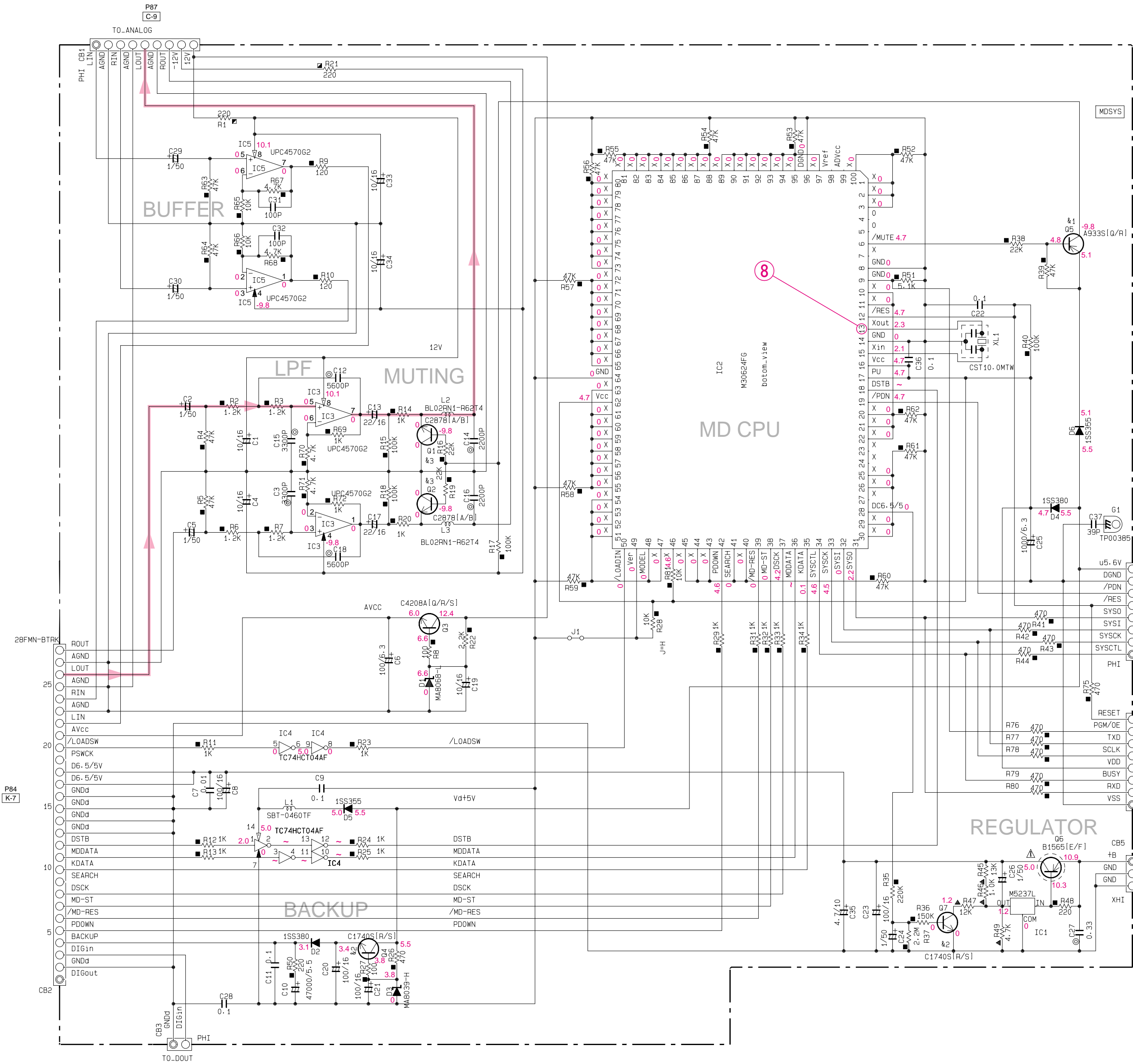


Note : ⑥ ~ ⑨

Connect an oscilloscope to the test points (⑥ ~ ⑨) through a filter as shown below.

- * All voltage are measured with a 10MΩ/V DC electric volt meter.
- * Components having special characteristics are marked  and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.

■ SCHEMATIC DIAGRAM (MD)



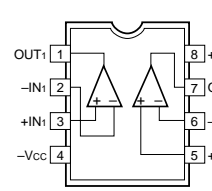
NOTICE (model)
(J)..... JAPANESE
(U)..... U. S. A
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

RESISTOR	
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
	CARBON FILM RESISTOR (P=10)
	METAL OXIDE FILM RESISTOR
	METAL FILM RESISTOR
	METAL PLATE RESISTOR
	FIRE PROOF CARBON FILM RESISTOR
	CEMENT MOLDED RESISTOR
	SEMI VARIABLE RESISTOR
	CHIP RESISTOR

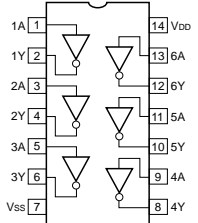
CAPACITOR	
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
	CERAMIC TUBULAR CAPACITOR
	POLYESTER FILM CAPACITOR
	POLYSTYRENE FILM CAPACITOR
	MICA CAPACITOR
	POLYPROPYLENE FILM CAPACITOR
	SEMICONDUCTIVE CERAMIC CAPACITOR

Interchangeable Parts at Manufacture-Stage		
Mark	Reference Parts Number	Parts Name
k1	Q5	2SA933S[Q/R]
		2SA1115[E/F]
		2SA1309A[Q/R/S]
k2	Q4.7	2SC1740S[R/S]
		2SC2603[E/F]
		2SC3311A[Q/R/S]
k3	Q1.2	2SC2878[A/B]
		2SD1915F[S/T]

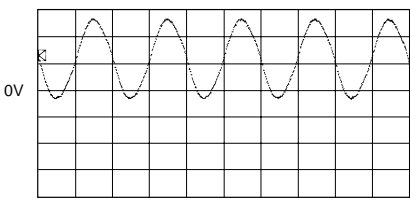
IC3, 5 : μ PC4570G2
Dual OP-Amp



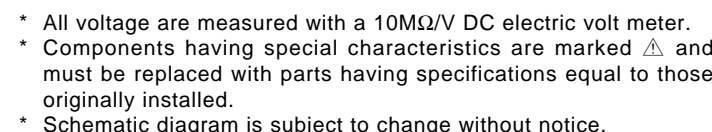
IC4 : TC74HCT04AF-T1
Hex Inverters



Point ⑧ (Pin13 of IC2)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



- * All voltage are measured with a 10M Ω /V DC electric volt meter.
- * Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
- * Schematic diagram is subject to change without notice.



■ SCHEMATIC DIAGRAM (INPUT)

1

2

3

4

5

6

7

8

9

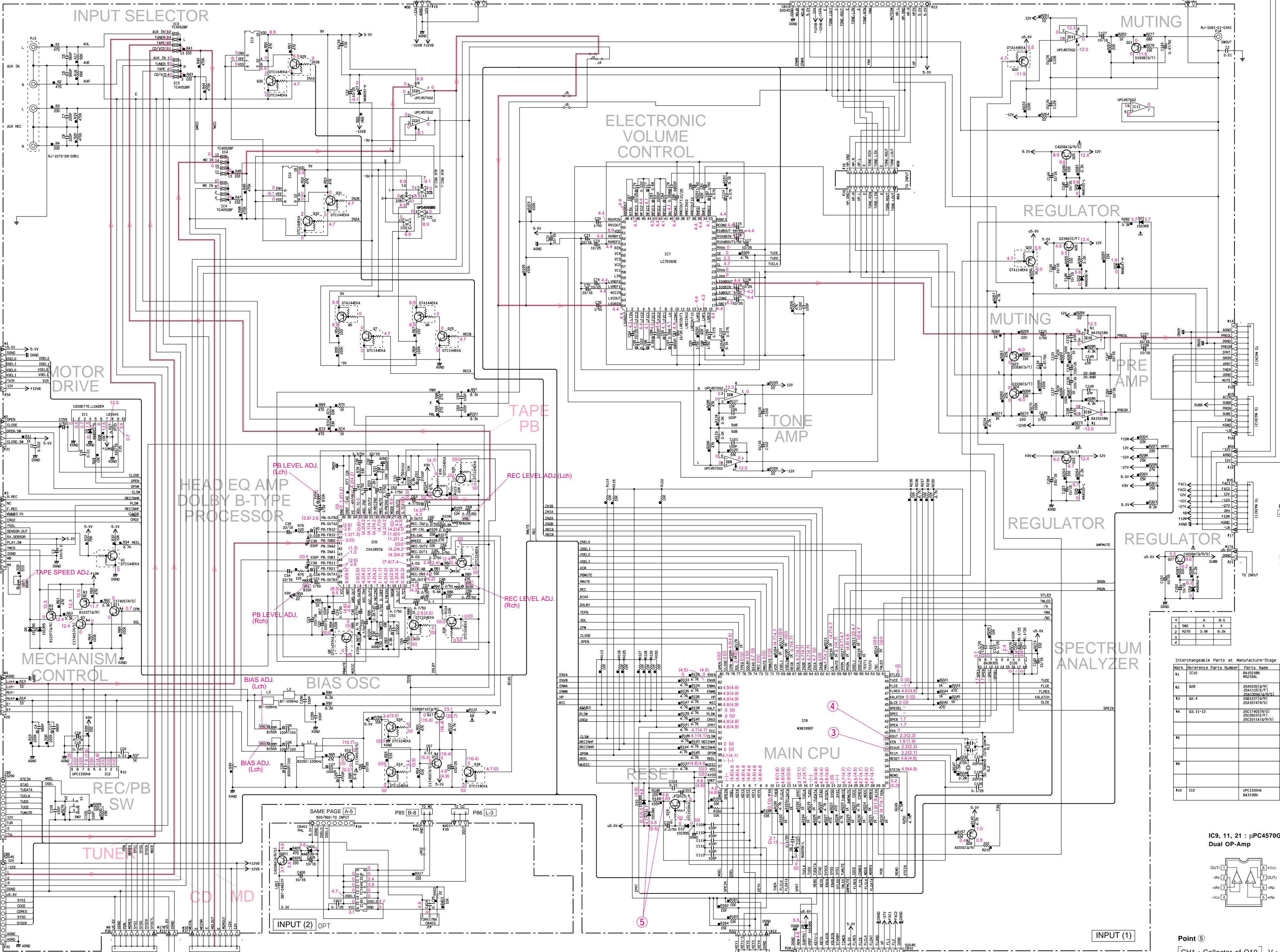
10

The voltages are measured by Type II/High tape at PLAY mode (no-signal condition)
Only the voltages () are at REC (CD) mode.

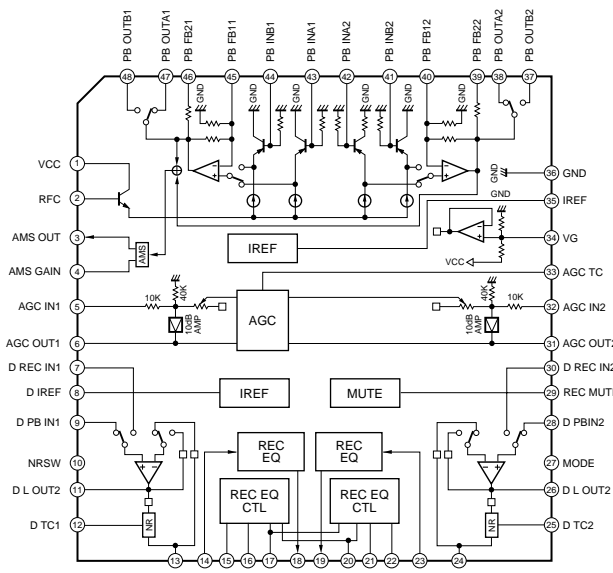
● DOLBY NR OFF

CAPACITOR	PARTS NAME	REMARKS	RESISTOR	PARTS NAME	REMARKS
NO MARK	ELECTROLYTIC CAPACITOR	(J)..... JAPANESE	NO MARK	CARBON FILM RESISTOR (P=5)	(J)..... U.S.A.
○	TANTALUM CAPACITOR	(C)..... CANADIAN	○	CARBON FILM RESISTOR (P=10)	(C)..... CANADIAN
○	NO MARK CERAMIC CAPACITOR	(T)..... GENERAL	○	METAL OXIDE FILM RESISTOR	(T)..... GENERAL
●	CERAMIC TUBULAR CAPACITOR	(A)..... AUSTRALIAN	△	METAL FILM RESISTOR	(A)..... AUSTRALIAN
○	POLYESTER FILM CAPACITOR	(B)..... BRITISH	△	METAL PLATE RESISTOR	(B)..... BRITISH
○	POLYSTYRENE FILM CAPACITOR	(D)..... EUROPEAN	△	FIRE-PROOF CARBON FILM RESISTOR	(D)..... EUROPEAN
○	MICA CAPACITOR	(T)..... CHINA	△	CEMENT MOLDED RESISTOR	(T)..... CHINA
○	POLYPROPYLENE FILM CAPACITOR	(L)..... SINGAPORE	△	SEMI-VARIABLE RESISTOR	(L)..... SINGAPORE
●	SEMICONDUCTIVE CERAMIC CAPACITOR		■	CHIP RESISTOR	

NOTICE (mode1)
(J)..... JAPANESE
(C)..... CANADIAN
(T)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(D)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

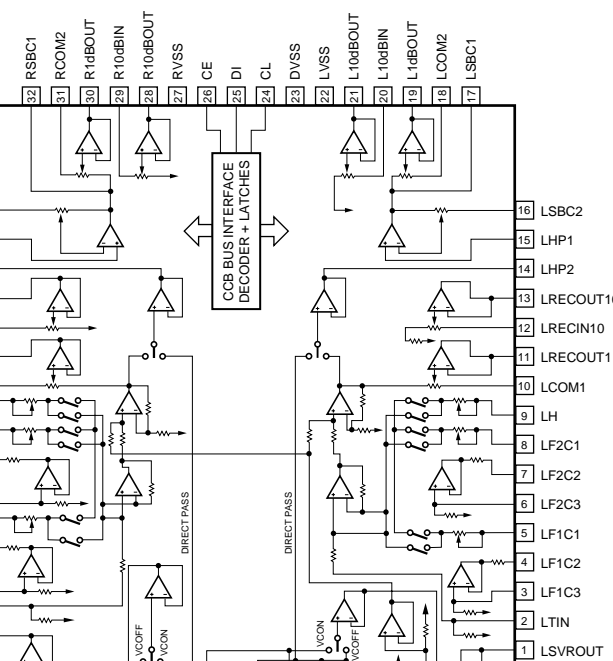


IC6 : CXA1897Q
Dolby B-Type Noise Reduction System with Recording/Playback Equalizer



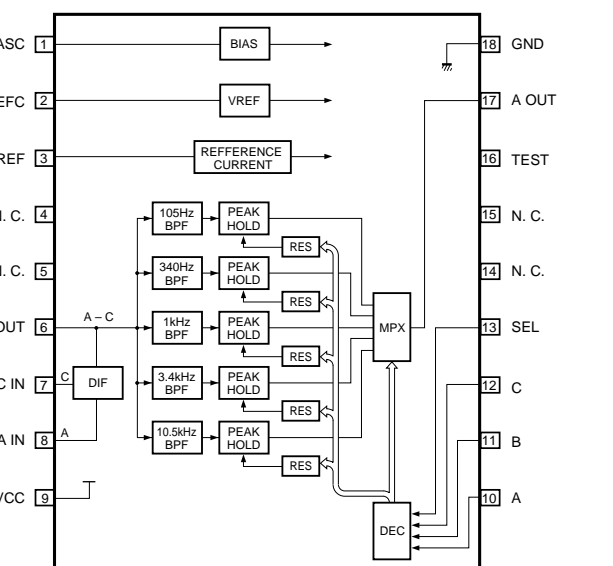
IC7 : LC75393E

Electronic Volume Control



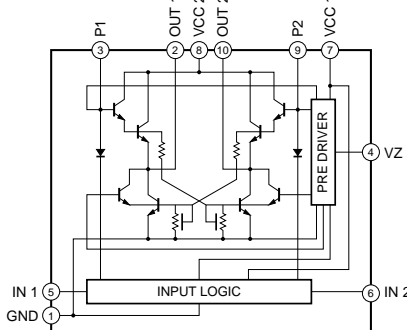
IC26 : BA3835S

5-Band BPF and Peak Hold for Spectrum Analyzer



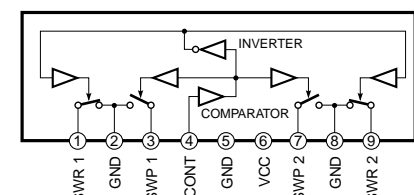
IC1 : LB1641

Motor Driver



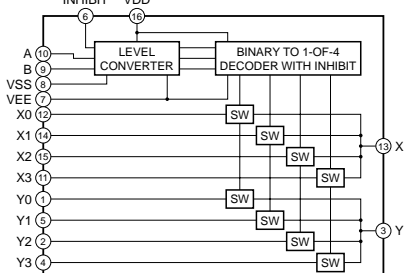
IC2 : μPC1330HA

2 ch Head Selector Switch



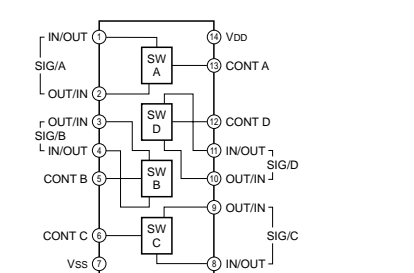
IC3, 4 : TC4052BF

Dual 4 Channel Analog Multiplexers/Demultiplexers



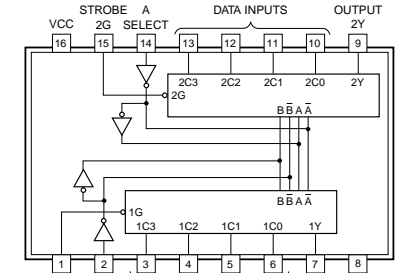
IC5 : μPD4066BG

Quad Analog Switch/Multiplexer

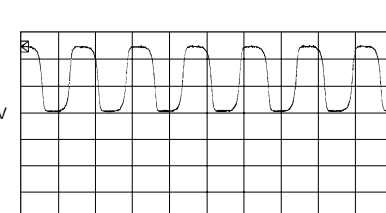


IC401 : TC74VHC153F

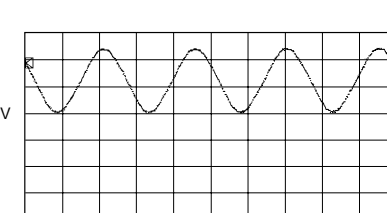
Dual 4 to 1 Data Selectors



Point ③ (Pin37 of IC8)
V : 2V/div H : 20 μsec/div
DC range 1 : 1 probe

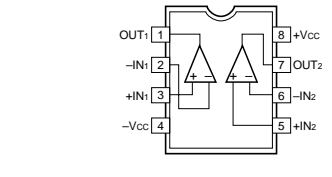


Point ④ (Pin39 of IC8)
V : 2V/div H : 50 nsec/div
DC range 1 : 1 probe



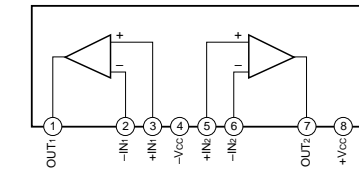
IC9, 11, 21 : μPC4570G2

Dual OP-Amp

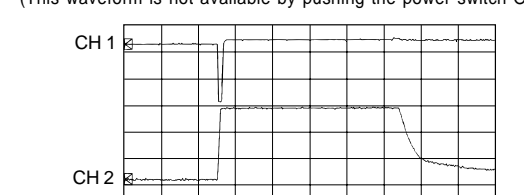


IC10 : BA15218N

Dual OP-Amp

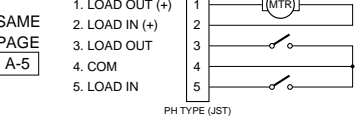


Point ⑤
CH1 : Collector of Q19 V : 2V/div (CH1)
CH2 : Anode of D11 V : 2V/div (CH2)
H : 0.5 sec/div DC range 1 : 1 probe
(This waveform is not available by pushing the power switch ON and OFF.)

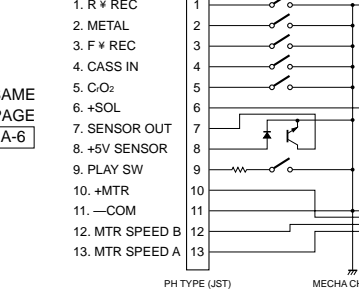


With the POWER ON, disconnect the A/C power cord. Reconnect the A/C power cord and the above waveforms will start.

LOADING PCB

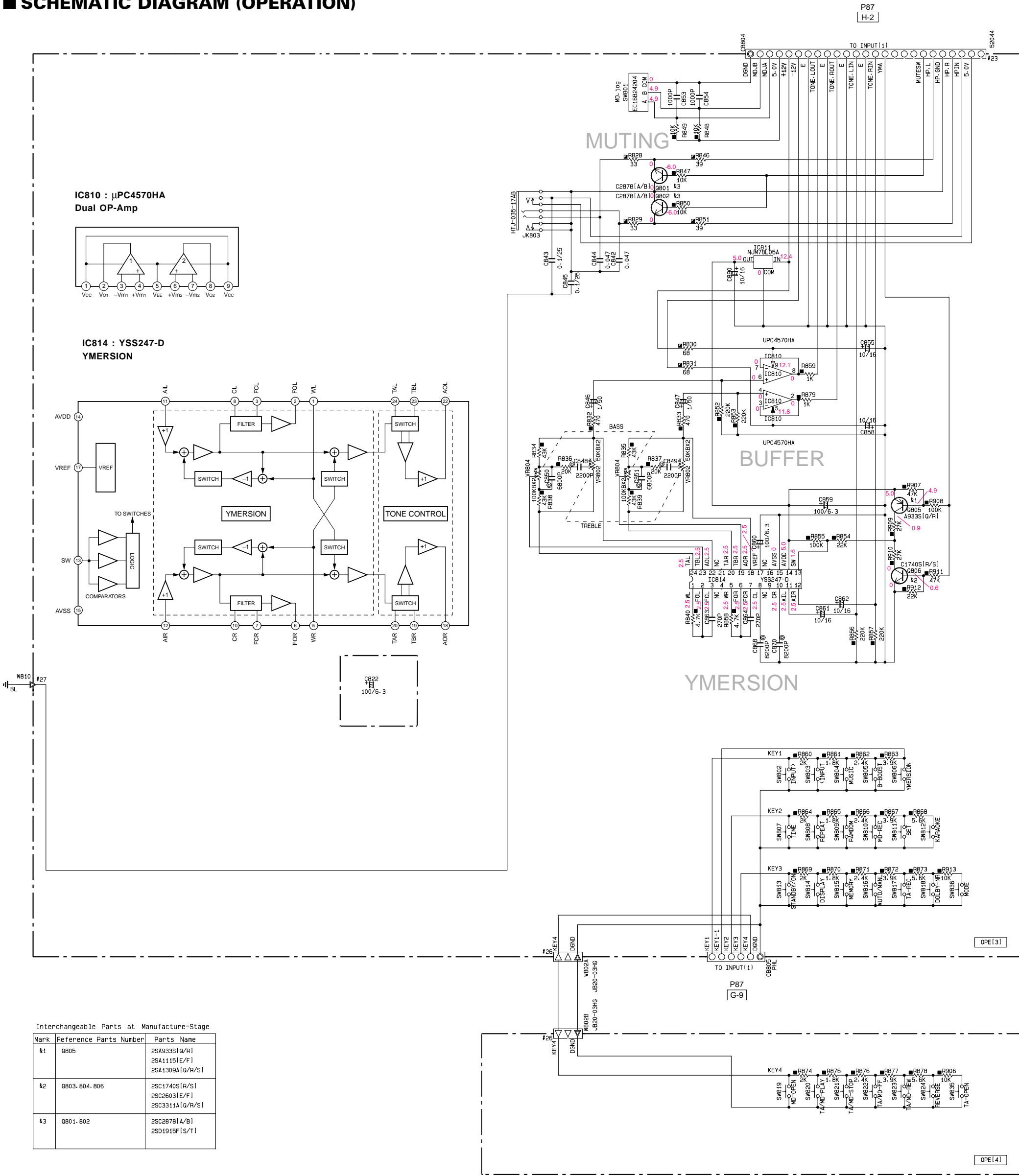


MAIN PCB



* All voltage are measured with a 10MΩ/V DC electric volt meter.
* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

SCHEMATIC DIAGRAM (OPERATION)

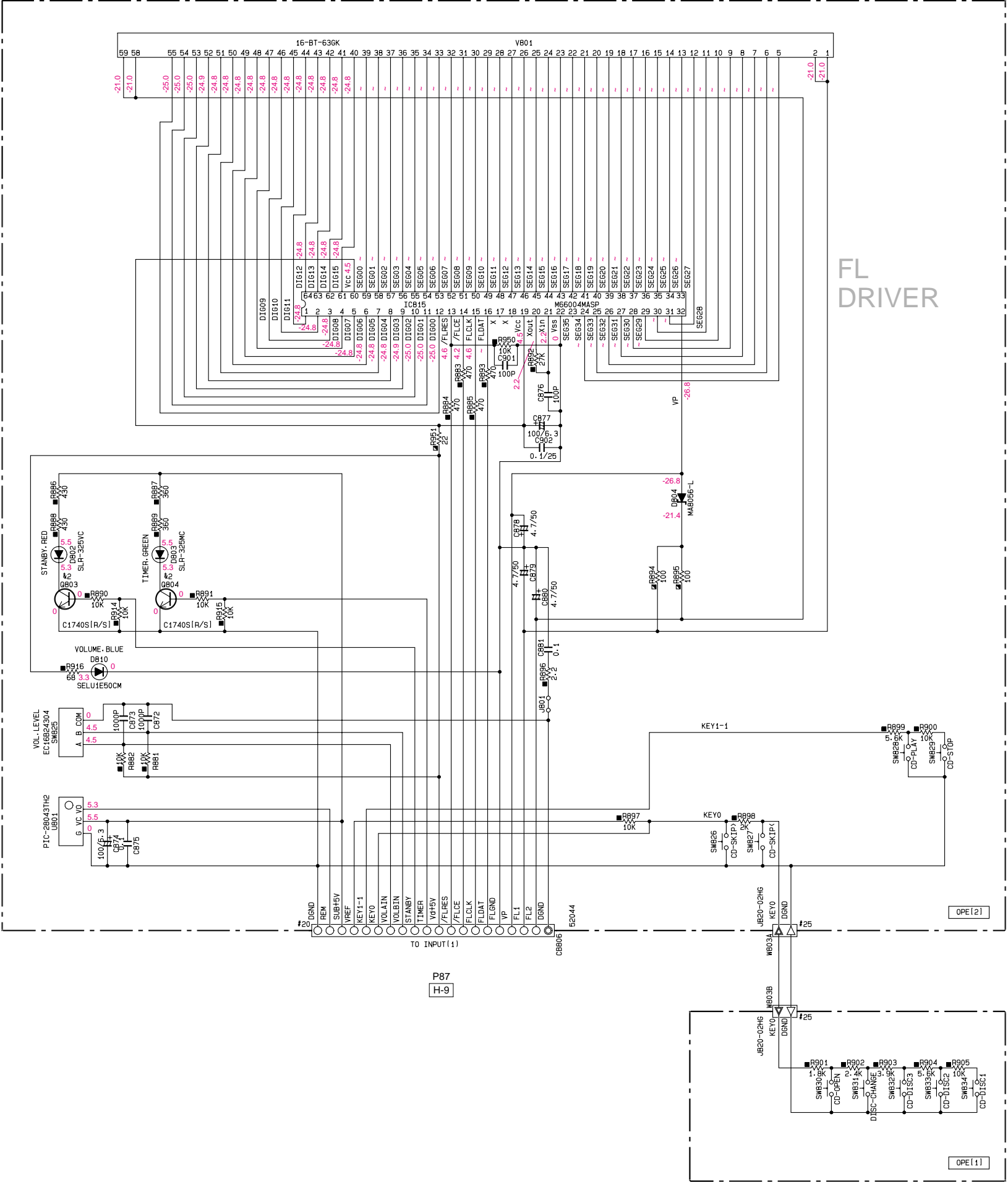


Interchangeable Parts at Manufacture-Stage		
Mark	Reference Parts Number	Parts Name
k1	0B05	2SA933S(Iq/R)
		2SA1115(E/F)
		2SA1309A(Iq/R/S)
k2	0B03-804-806	2SC1740S(R/S)
		2SC2603(E/F)
		2SC3311A(Iq/R/S)
k3	0B01-802	2SC2878(Iq/R)
		2SD1919F(S/T)

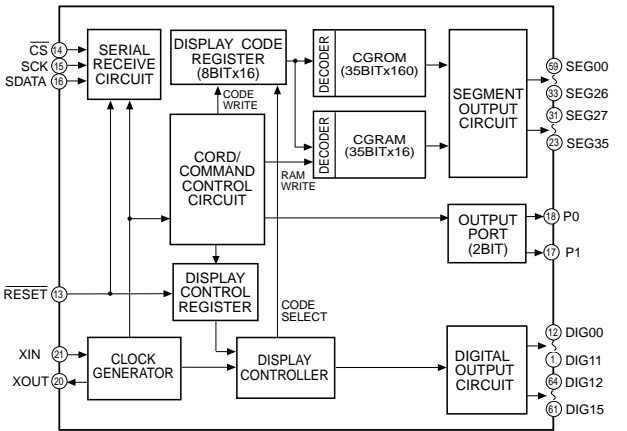
CAPACITOR	REMARKS	PARTS NAME
NO MARK	NO MARK	ELECTROLYTIC CAPACITOR
⊗	⊗	TANTALUM CAPACITOR
NO MARK	NO MARK	CERAMIC CAPACITOR
●	●	CERAMIC TUBULAR CAPACITOR
⊙	⊙	POLYESTER FILM CAPACITOR
○	○	POLYSTYRENE FILM CAPACITOR
①	①	MICA CAPACITOR
⊖	⊖	POLYPROPYLENE FILM CAPACITOR
●	●	SEMICONDUCTIVE CERAMIC CAPACITOR

RESISTOR	REMARKS	PARTS NAME
NO MARK	NO MARK	CARBON FILM RESISTOR (P=5)
⊗	⊗	CARBON FILM RESISTOR (P=10)
△	△	METAL OXIDE FILM RESISTOR
⊖	⊖	METAL FILM RESISTOR
⊙	⊙	METAL PLATE RESISTOR
⊖	⊖	FIRE PROOF CARBON FILM RESISTOR
⊖	⊖	CEMENT MOLDED RESISTOR
⊖	⊖	SEMI VARIABLE RESISTOR
■	■	CHIP RESISTOR

NOTICE (mode1)
(J)..... JAPANESE
(U)..... U. S. A.
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

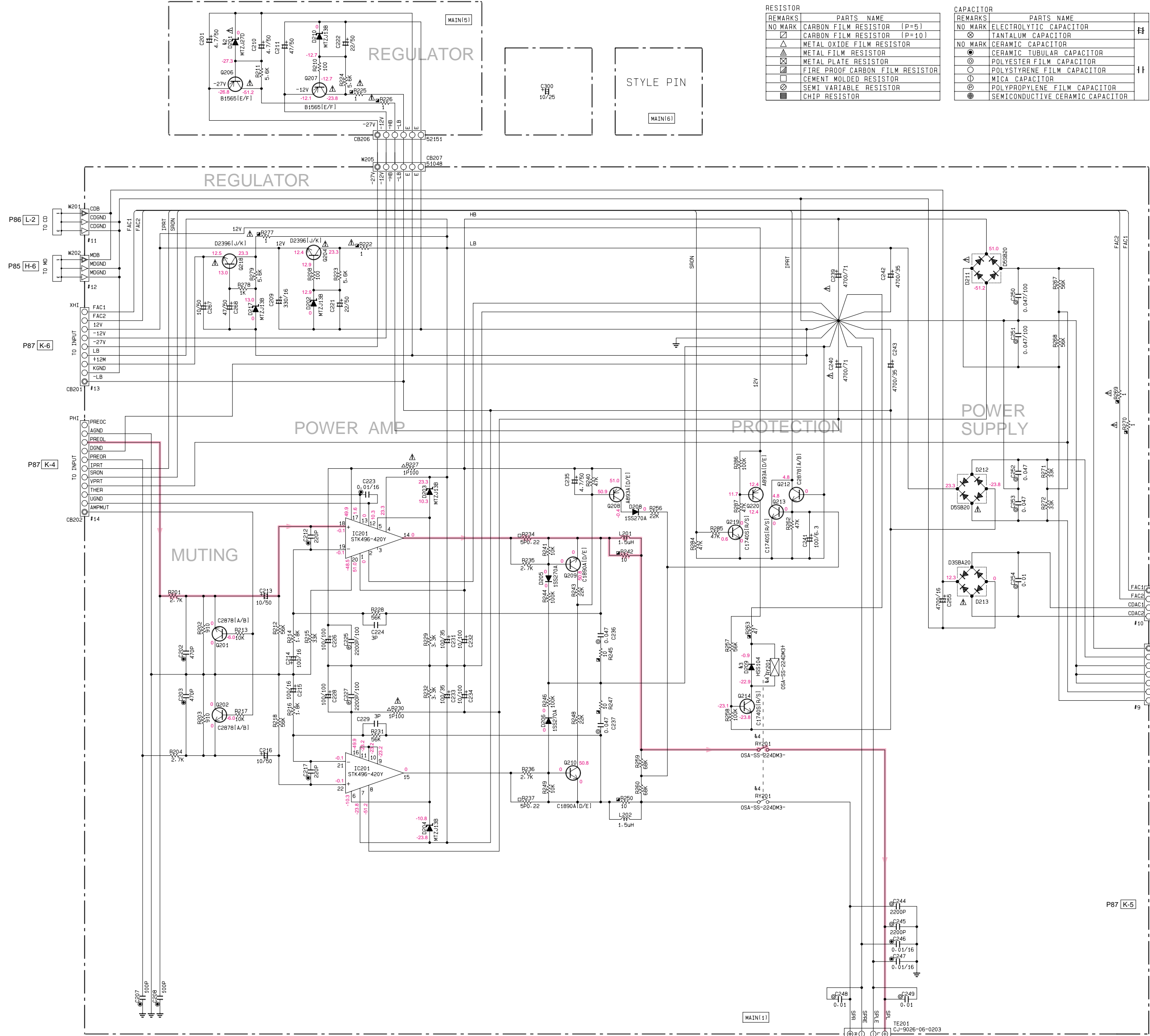


IC815 : M66004MASP
FL Driver



* All voltage are measured with a 10MΩ/V DC electric volt meter.
* Components having special characteristics are marked △ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

■ SCHEMATIC DIAGRAM (MAIN)



REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
△	CARBON FILM RESISTOR (P=10)
▴	METAL OXIDE FILM RESISTOR
▾	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
■	FIRE PROOF CARBON FILM RESISTOR
□	CEMENT MOLDED RESISTOR
◇	SEMI VARIABLE RESISTOR
■	CHIP RESISTOR

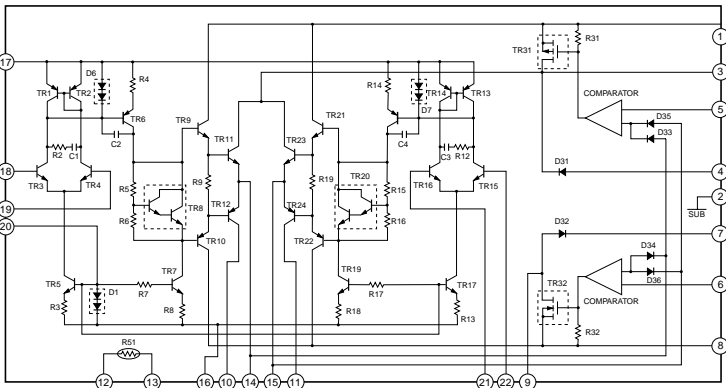
REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
●	CERAMIC CAPACITOR
○	CERAMIC TUBULAR CAPACITOR
⊙	POLYESTER FILM CAPACITOR
○	POLYSTYRENE FILM CAPACITOR
⊖	MICA CAPACITOR
⊕	POLYPROPYLENE FILM CAPACITOR
●	SEMICONDUCTIVE CERAMIC CAPACITOR

Mark	Reference Parts Number	Parts Name
k1		
k2	D201	MTZJ270 HZS272
k3	D209, D214	HS104 1S133 1S176
k4	RY201	OSA-SS-2240M3 D624D2-DS1M ALA2F24
k5	RY203	SDT-S-112LMR D612D1-D1M11 ALKS321

NOTICE (model)
(J)..... JAPANESE
(U)..... U. S. A
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(T)..... CHINA
(L)..... SINGAPORE

5		A	B, G
1			
2			
4	T202	XW021	XW022
5			
6			
7			

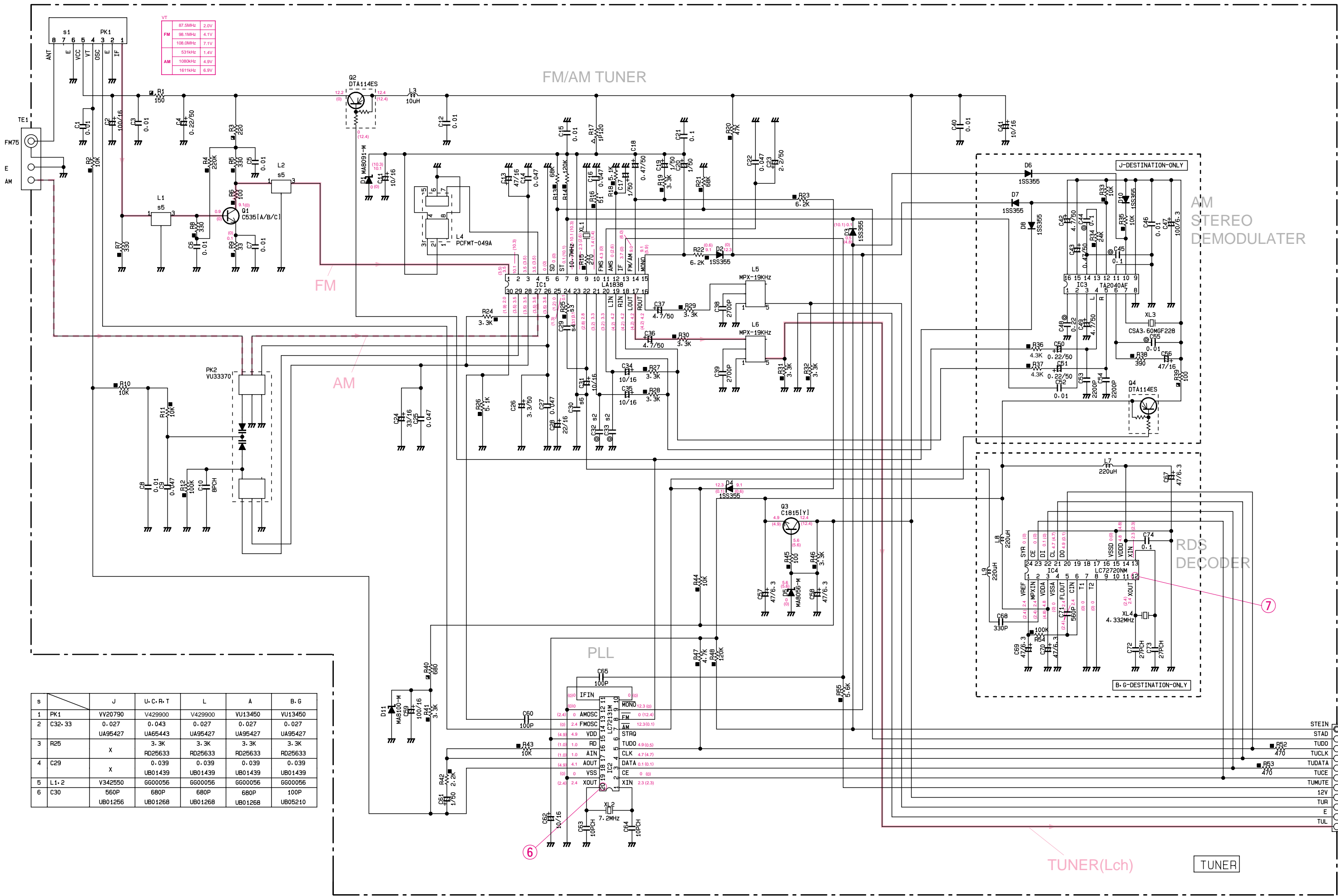
IC201 : STK496-420Y
2 Channel AF Power Amp



* All voltage are measured with a 10MΩ/V DC electric volt meter.
* Components having special characteristics are marked △ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

SCHEMATIC DIAGRAM (TUNER)

Each voltage represents the voltage when receiving FM (stereo) signal and the voltage in the parentheses () is the voltage when receiving AM signal.



S	J	U-C-R-T	L	A	B-G	
1	PK1	VV20790	V429900	V429900	VU13450	VU13450
2	C32-33	0.027	0.043	0.027	0.027	0.027
3	R25	UA95427	UA65443	UA95427	UA95427	UA95427
4	C29	X	RD25633	RD25633	RD25633	RD25633
5	L1-2	V342550	6600056	6600056	6600056	6600056
6	C30	560P	680P	680P	680P	100P
		UB01256	UB01268	UB01268	UB01268	UB05210

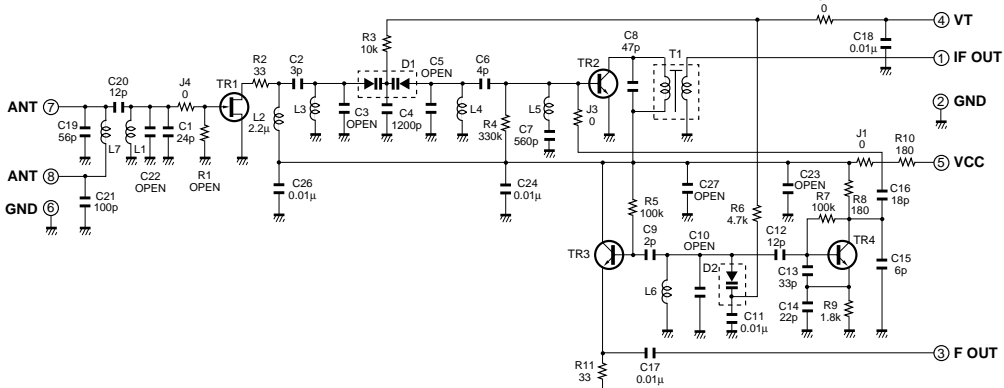
REMARKS	PARTS NAME
NO MARK	CARBON FILM RESISTOR (P=5)
⊠	CARBON FILM RESISTOR (P=10)
Δ	METAL OXIDE FILM RESISTOR
⊠	METAL FILM RESISTOR
⊠	METAL PLATE RESISTOR
⊠	FIRE PROOF CARBON FILM RESISTOR
⊠	CEMENT MOLDED RESISTOR
⊠	SEMI VARIABLE RESISTOR
⊠	CHIP RESISTOR

REMARKS	PARTS NAME
NO MARK	ELECTROLYTIC CAPACITOR
⊗	TANTALUM CAPACITOR
NO MARK	CERAMIC CAPACITOR
⊗	CERAMIC TUBULAR CAPACITOR
⊗	POLYESTER FILM CAPACITOR
⊗	POLYSTYRENE FILM CAPACITOR
⊗	MICA CAPACITOR
⊗	POLYPROPYLENE FILM CAPACITOR
⊗	SEMICONDUCTIVE CERAMIC CAPACITOR

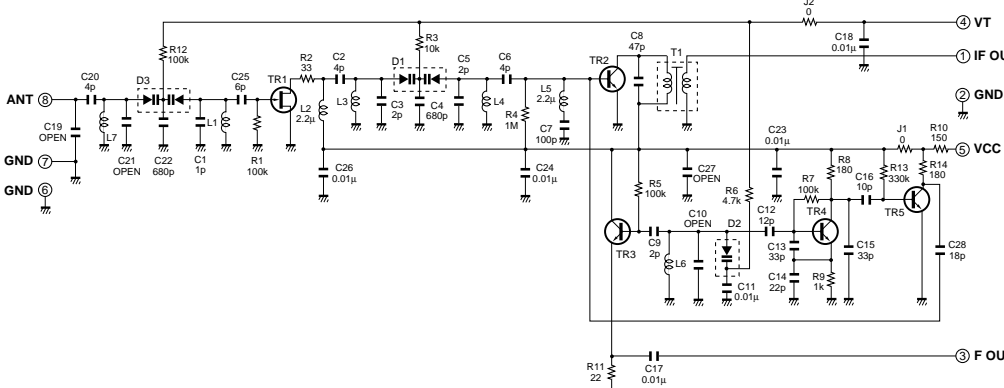
NOTICE (model)

(J)..... JAPANESE
(U)..... U. S. A
(C)..... CANADIAN
(R)..... GENERAL
(A)..... AUSTRALIAN
(B)..... BRITISH
(G)..... EUROPEAN
(T)..... CHINA
(L)..... SINGAPORE

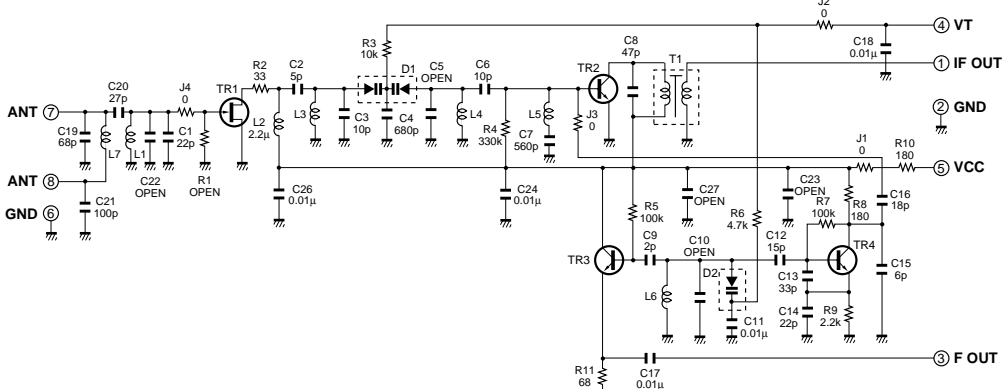
PK1 : TFFJ2U515A (V4299000) U, C, R, T, L models



PK1 : TFFJ4E515A (VU134500) A, B, G models

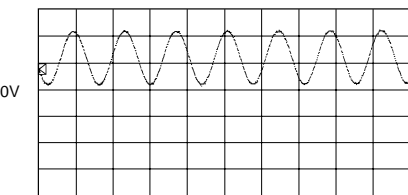


PK1 : TFFJ2J541A (VV207900) J model

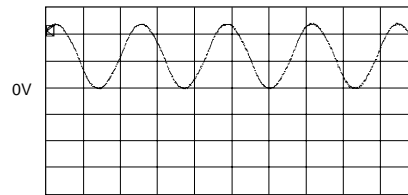


PB7 [A-B]

Point ⑥ (Pin20 of IC2)
V : 2V/div H : 0.1 μsec/div
DC range 1 : 1 probe



Point ⑦ (Pin12 of IC4)
V : 2V/div H : 0.1 μsec/div
DC range 1 : 1 probe



* All voltage are measured with a 10MΩ/V DC electric volt meter.
* Components having special characteristics are marked Δ and must be replaced with parts having specifications equal to those originally installed.
* Schematic diagram is subject to change without notice.

PARTS LIST

■ ELECTRICAL PARTS

■ WARNING

Components having special characteristics are marked \triangle and must be replaced with parts having specifications equal to those originally installed.

- Carbon resistors (1/6W or 1/4W) are not included in the ELECTRICAL PARTS List. For the part Nos. of the carbon resistors refer to the last page.
- Chip resistors are listed on page 103.

ABBREVIATIONS IN THIS LIST ARE AS FOLLOWS :

C.A.EL.CHP	: CHIP ALUMI. ELECTROLYTIC CAP	L.EMIT	: LIGHT EMITTING MODULE
C.CE	: CERAMIC CAP	LED.DSPLY	: LED DISPLAY
C.CE.ARRAY	: CERAMIC CAP ARRAY	LED.INFRD	: LED, INFRARED
C.CE.CHP	: CHIP CERAMIC CAP	MODUL.RF	: MODULATOR, RF
C.CE.ML	: MULTILAYER CERAMIC CAP	PHOT.CPL	: PHOTO COUPLER
C.CE.M.CHP	: CHIP MULTILAYER CERAMIC CAP	PHOT.INTR	: PHOTO INTERRUPTER
C.CE.SAFTY	: RECOGNIZED CERAMIC CAP	PHOT.RFLCT	: PHOTO REFLECTOR
C.CE.TUBLR	: CERAMIC TUBULAR CAP	PIN.TEST	: PIN, TEST POINT
C.CE.SMI	: SEMI CONDUCTIVE CERAMIC CAP	PLST.RIVET	: PLASTIC RIVET
C.EL	: ELECTROLYTIC CAP	R.ARRAY	: RESISTOR ARRAY
C.MICA	: MICA CAP	R.CAR	: CARBON RESISTOR
C.ML.FLM	: MULTILAYER FILM CAP	R.CAR.CHP	: CHIP RESISTOR
C.MP	: METALLIZED PAPER CAP	R.CAR.FP	: FLAME PROOF CARBON RESISTOR
C.MYLAR	: MYLAR FILM CAP	R.FUS	: FUSABLE RESISTOR
C.MYLAR.ML	: MULTILAYER MYLAR FILM CAP	R.MTL.CHP	: CHIP METAL FILM RESISTOR
C.PAPER	: PAPER CAPACITOR	R.MTL.FLM	: METAL FILM RESISTOR
C.PLS	: POLYSTYRENE FILM CAP	R.MTL.OXD	: METAL OXIDE FILM RESISTOR
C.POL	: POLYESTER FILM CAP	R.MTL.PLAT	: METAL PLATE RESISTOR
C.POLY	: POLYETHYLENE FILM CAP	RSNR.CE	: CERAMIC RESONATOR
C.PP	: POLYPROPYLENE FILM CAP	RSNR.CRYS	: CRYSTAL RESONATOR
C.TNTL	: TANTALUM CAP	R.TW.CEM	: TWIN CEMENT FIXED RESISTOR
C.TNTL.CHP	: CHIP TANTALUM CAP	R.WW	: WIRE WOUND RESISTOR
C.TRIM	: TRIMMER CAP	SCR.BND.HD	: BIND HEAD B-TITE SCREW
CN	: CONNECTOR	SCR.BW.HD	: BW HEAD TAPPING SCREW
CN.BS.PIN	: CONNECTOR, BASE PIN	SCR.CUP	: CUP TITE SCREW
CN.CANNON	: CONNECTOR, CANNON	SCR.TERM	: SCREW TERMINAL
CN.DIN	: CONNECTOR, DIN	SCR.TR	: SCREW, TRANSISTOR
CN.FLAT	: CONNECTOR, FLAT CABLE	SUPRT.PCB	: SUPPORT, P.C.B.
CN.POST	: CONNECTOR, BASE POST	SURG.PRTCT	: SURGE PROTECTOR
COIL.MX.AM	: COIL, AM MIX	SW.TACT	: TACT SWITCH
COIL.AT.FM	: COIL, FM ANTENNA	SW.LEAF	: LEAF SWITCH
COIL.DT.FM	: COIL, FM DETECT	SW.LEVER	: LEVER SWITCH
COIL.MX.FM	: COIL, FM MIX	SW.MICRO	: MICRO SWITCH
COIL.OUTPT	: OUTPUT COIL	SW.PUSH	: PUSH SWITCH
DIOD.ARRAY	: DIODE ARRAY	SW.RT.ENC	: ROTARY ENCODER
DIODE.BRG	: DIODE BRIDGE	SW.RT.MTR	: ROTARY SWITCH WITH MOTOR
DIODE.CHP	: CHIP DIODE	SW.RT	: ROTARY SWITCH
DIODE.VAR	: VARACTOR DIODE	SW.SLIDE	: SLIDE SWITCH
DIOD.Z.CHP	: CHIP ZENER DIODE	TERM.SP	: SPEAKER TERMINAL
DIODE.ZENR	: ZENER DIODE	TERM.WRAP	: WRAPPING TERMINAL
DSCR.CE	: CERAMIC DISCRIMINATOR	THRMST.CHP	: CHIP THERMISTOR
FER.BEAD	: FERRITE BEADS	TR.CHP	: CHIP TRANSISTOR
FER.CORE	: FERRITE CORE	TR.DGT	: DIGITAL TRANSISTOR
FET.CHP	: CHIP FET	TR.DGT.CHP	: CHIP DIGITAL TRANSISTOR
FL.DSPLY	: FLUORESCENT DISPLAY	TRANS	: TRANSFORMER
FLTR.CE	: CERAMIC FILTER	TRANS.PULS	: PULSE TRANSFORMER
FLTR.COMB	: COMB FILTER MODULE	TRANS.PWR	: POWER TRANSFORMER ASS'y
FLTR.LC.RF	: LC FILTER, EMI	TUNER.AM	: TUNER PACK, AM
GND.MTL	: GROUND PLATE	TUNER.FM	: TUNER PACK, FM
GND.TERM	: GROUND TERMINAL	TUNER.PK	: FRONT-END TUNER PACK
HOLDER.FUS	: FUSE HOLDER	VR	: ROTARY POTENTIOMETER
IC.PRTCT	: IC PROTECTOR	VR.MTR	: POTENTIOMETER WITH MOTOR
JUMPER.CN	: JUMPER CONNECTOR	VR.SW	: POTENTIOMETER WITH ROTARY SW
JUMPER.TST	: JUMPER, TEST POINT	VR.SLIDE	: SLIDE POTENTIOMETER
L.DTCT	: LIGHT DETECTING MODULE	VR.TRIM	: TRIMMER POTENTIOMETER

Note) Those parts marked with “#” are not included in the P.C.B. ass'y.

P.C.B. CD

Schm Ref.	PART NO.	Description		
*	V4004200	P.C.B.	CD	
CB1	V2731000	CN.FMN	16P	
CB2	VU929500	CN.BS.PIN	6P	
CB3	VU534900	CN.BS.PIN	6P	
CB4	VB390200	CN.BS.PIN	6P	
CB5	VB389900	CN.BS.PIN	3P	
CB7	VB858200	CN.BS.PIN	3P	
CB8	LB919030	CN.BS.PIN	3P	
CB9	VM929900	CN.BS.PIN	15P	
C1	UN866100	C.EL	1uF	50V
C2	UN866100	C.EL	1uF	50V
C3	UR818100	C.EL	100uF	6.3V
C4	UR818470	C.EL	470uF	6.3V
C5	UB045100	C.CE.M.CHP	0.1uF	50V
C6	UB045100	C.CE.M.CHP	0.1uF	50V
C7	UB044100	C.CE.M.CHP	0.01uF	50V
C8	UA952100	C.MYLAR	100pF	50V
C9	UB045100	C.CE.M.CHP	0.1uF	50V
C10	UA655100	C.MYLAR	0.1uF	50V
C11	UR837470	C.EL	47uF	16V
C12	UR866100	C.EL	1uF	50V
C13	UB013100	C.CE.M.CHP	1000pF	50V
C14	UB044100	C.CE.M.CHP	0.01uF	50V
C15	UR818100	C.EL	100uF	6.3V
C16	UA655100	C.MYLAR	0.1uF	50V
C17	UR828100	C.EL	100uF	10V
C18	UR838220	C.EL	220uF	16V
C19	UR837100	C.EL	10uF	16V
C20	UA954470	C.MYLAR	0.047uF	50V
C21	UA953180	C.MYLAR	1800pF	50V
C22	UA953220	C.MYLAR	2200pF	50V
C23	UA655100	C.MYLAR	0.1uF	50V
C24	UA953470	C.MYLAR	4700pF	50V
C25	UA953220	C.MYLAR	2200pF	50V
C26	UA953220	C.MYLAR	2200pF	50V
C27	UA655270	C.MYLAR	0.27uF	50V
C29	UR818100	C.EL	100uF	6.3V
C31	UB012560	C.CE.M.CHP	560pF	50V
C32	UB045100	C.CE.M.CHP	0.1uF	50V
C33	UA655330	C.MYLAR	0.33uF	50V
C34	UA654240	C.MYLAR	0.024uF	50V
C35	UB044100	C.CE.M.CHP	0.01uF	50V
C36	VJ900300	C.CE.M.CHP	22pF	50V
C37	VJ900300	C.CE.M.CHP	22pF	50V
C38	UR818100	C.EL	100uF	6.3V
C39	UR818470	C.EL	470uF	6.3V
C40	UB044100	C.CE.M.CHP	0.01uF	50V
C41	UB044100	C.CE.M.CHP	0.01uF	50V
C42	UB044100	C.CE.M.CHP	0.01uF	50V
C44	UB044100	C.CE.M.CHP	0.01uF	50V
C45	UB044100	C.CE.M.CHP	0.01uF	50V
C46	UR818100	C.EL	100uF	6.3V
C47	UR866100	C.EL	1uF	50V

* New Parts

Schm Ref.	PART NO.	Description		
C48	UR818100	C.EL	100uF	6.3V
C50	UB044100	C.CE.M.CHP	0.01uF	50V
C51	UR866100	C.EL	1uF	50V
C52	UA954100	C.MYLAR	0.01uF	50V
C53	UA954100	C.MYLAR	0.01uF	50V
C54	UR866100	C.EL	1uF	50V
C55	UA655330	C.MYLAR	0.33uF	50V
C56	UB044100	C.CE.M.CHP	0.01uF	50V
C57	UB044100	C.CE.M.CHP	0.01uF	50V
C58	UB044100	C.CE.M.CHP	0.01uF	50V
C59	UA953680	C.MYLAR	6800pF	50V
C60	UA953220	C.MYLAR	2200pF	50V
C61	UA953220	C.MYLAR	2200pF	50V
C62	UA953680	C.MYLAR	6800pF	50V
C63	UR828100	C.EL	100uF	10V
C64	UR837330	C.EL	33uF	16V
C65	UR818100	C.EL	100uF	6.3V
C66	UR837220	C.EL	22uF	25V
C67	UR837220	C.EL	22uF	25V
C68	UR837220	C.EL	22uF	25V
C69	UR837220	C.EL	22uF	25V
C71	UA953150	C.MYLAR	1500pF	50V
C72	UA953150	C.MYLAR	1500pF	50V
C86	UB051100	C.CE.M.CHP	10pF	50V
C87	VR498100	C.EL	6.8uF	6.3V
C89	UB012470	C.CE.M.CHP	470pF	50V
C90	UB044100	C.CE.M.CHP	0.01uF	50V
C91	UB045100	C.CE.M.CHP	0.1uF	50V
C100	UB045100	C.CE.M.CHP	0.1uF	50V
C101	UB045100	C.CE.M.CHP	0.1uF	50V
C102	UB045100	C.CE.M.CHP	0.1uF	50V
D1	VT332900	DIODE	1SS355	
D2	VU993400	DIODE.ZENR	MA8062-M	6.2V
D3	VT332900	DIODE	1SS355	
D4	VT332900	DIODE	1SS355	
D5	VT332900	DIODE	1SS355	
D6	VT332900	DIODE	1SS355	
D7	VU993800	DIODE.ZENR	MA8068-M	6.8V
G1	VR463400	TERM.GND	D3.5	TP00385
G2	VR463400	TERM.GND	D3.5	TP00385
HS1	Vi835500	HEAT.SINK	PH-0124S-B	
HS2	VA119100	HEAT.SINK		
IC1	XV986A00	IC	LA6541D DRIVER	
IC2	XS741A00	IC	AN8806SB	
IC3	XR274A00	IC	TA8409SE	
IC4	XR274A00	IC	TA8409SE	
IC5	XT342A00	IC	MN662741RPB1	
IC7	XQ248A00	IC	TC74HC125AF BUS BU	
IC10	XF291A00	IC	uPC4570G2	
IC11	XW501A00	IC	M38197MAA-628FP	
IC12	XQ667A00	IC	M5237L	
IC13	XS993A00	IC	TC74HC04AF INV	
L1	VU889500	COIL	220uH	

* New Parts

P.C.B. CD & MD

Schm Ref.	PART NO.	Description	
L2	VU889500	COIL	220uH
Q1	VR402300	TR	2SB647 C,D
Q2	VD678700	TR.DGT	DTC114ES
Q3	iC287820	TR	2SC2878 A,B
Q4	VD678700	TR.DGT	DTC114ES
Q5	VD678700	TR.DGT	DTC114ES
Q6	VS883300	TR	2SB1565 E,F
Q7	VR510800	TR	2SD2396 J,K
Q8	VD678700	TR.DGT	DTC114ES
Q9	iC287820	TR	2SC2878 A,B
Q10	iC287820	TR	2SC2878 A,B
Q15	VD678700	TR.DGT	DTC114ES
Q16	VD678700	TR.DGT	DTC114ES
Q17	VD678500	TR.DGT	DTA114ES
R17	HV753220	R.CAR.FP	2.2Ω 1/4W
R35	VH307000	R.ARRAY	RGLE6X473J
R56	VH307000	R.ARRAY	RGLE6X473J
R57	VH307000	R.ARRAY	RGLE6X473J
R85	VH307000	R.ARRAY	RGLE6X473J
R86	VH307000	R.ARRAY	RGLE6X473J
R91	Vi868300	R.FUS	0.68Ω 1/6W
R97	VH307000	R.ARRAY	RGLE6X473J
R145	VU318400	R.MTL.OXD	27Ω 1W
R158	VU318400	R.MTL.OXD	27Ω 1W
TP1	VL448600	JUMPER.TST	
TP2	VL448600	JUMPER.TST	
XL1	VJ719800	RSNR.CRYS	16.9344MHz
XL2	VJ802400	RSNR.CE	8MHz
	VJ828000	PIN	IMSA-6024-03E
* V4004000	P.C.B.	MD	
* CB1	VB390500	CN.BS.PIN	9P
* CB2	V3733000	CN	28P
CB3	VB389800	CN.BS.PIN	2P
CB4	VB390400	CN.BS.PIN	8P
CB5	VL844700	CN.BS.PIN	3P
* CB6	VP682200	CN.BS.PIN	8P
C1	UR837100	C.EL	10uF 16V
C2	UR866100	C.EL	1uF 50V
C3	UA953330	C.MYLAR	3300pF 50V
C4	UR837100	C.EL	10uF 16V
C5	UR866100	C.EL	1uF 50V
C6	UR818100	C.EL	100uF 6.3V
C7	UB044100	C.CE.M.CHP	0.01uF 50V
C8	UR838100	C.EL	100uF 16V
C9	UB045100	C.CE.M.CHP	0.1uF 50V
C10	VU545000	C.EL	47000uF 5.5V
C11	UB045100	C.CE.M.CHP	0.1uF 50V
C12	UA953560	C.MYLAR	5600pF 50V
C13	UR837220	C.EL	22uF 25V
C14	UA953220	C.MYLAR	2200pF 50V

* New Parts

Schm Ref.	PART NO.	Description	
C15	UA953330	C.MYLAR	3300pF 50V
C16	UA953220	C.MYLAR	2200pF 50V
C17	UR837220	C.EL	22uF 25V
C18	UA953560	C.MYLAR	5600pF 50V
C19	UR837100	C.EL	10uF 16V
C20	UR838100	C.EL	100uF 16V
C21	UR838100	C.EL	100uF 16V
C22	UB045100	C.CE.M.CHP	0.1uF 50V
* C23	UR828470	C.EL	470uF 10V
C24	UR866100	C.EL	1uF 50V
C25	UR819100	C.EL	1000uF 6.3V
C26	UR866100	C.EL	1uF 50V
C27	UA655330	C.MYLAR	0.33uF 50V
C28	UB045100	C.CE.M.CHP	0.1uF 50V
C29	UR866100	C.EL	1uF 50V
C30	UR866100	C.EL	1uF 50V
C31	UB052100	C.CE.M.CHP	100pF 50V
C32	UB052100	C.CE.M.CHP	100pF 50V
C33	UR837100	C.EL	10uF 16V
C34	UR837100	C.EL	10uF 16V
C35	V3694000	C.EL	4.7uF 10V
C36	UB045100	C.CE.M.CHP	0.1uF 50V
C37	UB051390	C.CE.M.CHP	39pF 50V
* D1	VU993700	DIODE.ZENR	MA8068-L 6.6V
D2	VV833200	DIODE	1SS380
D3	VU991500	DIODE.ZENR	MA8039-H 4.0V
D4	VV833200	DIODE	1SS380
D5	VT332900	DIODE	1SS355
D6	VT332900	DIODE	1SS355
G1	VR463400	TERM.GND	D3.5 TP00385
* HS1	V3714600	HEAT.SINK	PUG26-25 GX-500ML
IC1	XQ667A00	IC	M5237L
IC2	XW072A00	IC	M30622M8-703FP
IC3	XF291A00	IC	uPC4570G2
* IC4	Xi297A00	IC	TC74HCT04AF-T1
IC5	XF291A00	IC	uPC4570G2
L1	VD473700	COIL	60uH
L2	VP133800	FER.BEAD	BL02RN1-R62T4
L3	VP133800	FER.BEAD	BL02RN1-R62T4
Q1	iC287820	TR	2SC2878 A,B
Q2	iC287820	TR	2SC2878 A,B
Q3	VK407600	TR	2SC4208A Q,R,S
Q4	iC174020	TR	2SC1740S R,S
Q5	iA093320	TR	2SA933S Q,R
Q6	VS883300	TR	2SB1565 E,F
Q7	iC174020	TR	2SC1740S R,S
R1	HV755220	R.CAR.FP	220Ω 1/4W
R21	HV755220	R.CAR.FP	220Ω 1/4W
* R45	RD557130	R.THCK.CHP	13KΩ 1/10W
* R49	RD556470	R.THCK.CHP	4.7KΩ 1/10W
XL1	VQ791000	RSNR.CE	10MHz
	VJ828000	PIN	IMSA-6024-03E
	EL300650	SCR.BW.HD	3x8-8 FCRM3-BL

* New Parts

P.C.B. INPUT

Schm Ref.	PART NO.	Description
* V4003000	P.C.B.	INPUT(A)
* V4004100	P.C.B.	INPUT(BG)
CB5	VQ963200	CN.BS.PIN 11P
CB6	VM859600	CN.BS.PIN 15P
CB10	VQ047500	CN.BS.PIN 20P
CB13	VP082900	CN.BS.PIN 25P
CB401	VB858700	CN.BS.PIN 8P
CB403	VT620100	L.DTCT TORX178A
C1	UB044100	C.CE.M.CHP 0.01uF 50V
C2	UB044220	C.CE.M.CHP 0.022uF 50V
C3	UR818100	C.EL 100uF 6.3V
C4	UA952680	C.MYLAR 680pF 50V
C5	UB012560	C.CE.M.CHP 560pF 50V
C6	UB012560	C.CE.M.CHP 560pF 50V
C7	UB012220	C.CE.M.CHP 220pF 50V
C8	UB012220	C.CE.M.CHP 220pF 50V
C15	UR838100	C.EL 100uF 16V
C16	UB044100	C.CE.M.CHP 0.01uF 50V
C17	UA952680	C.MYLAR 680pF 50V
C18	UR837470	C.EL 47uF 16V
C19	UB044470	C.CE.M.CHP 0.047uF 50V
C20	UB044100	C.CE.M.CHP 0.01uF 50V
C21	UR866100	C.EL 1uF 50V
C22	UR838100	C.EL 100uF 16V
C23	UR838100	C.EL 100uF 16V
C24	UR865100	C.EL 0.1uF 50V
C25	UT652100	C.PP 100pF 100V
C26	UT652100	C.PP 100pF 100V
C27	UA953100	C.MYLAR 1000pF 50V
C28	UT653820	C.PP 8200pF 100V
C29	UA953470	C.MYLAR 4700pF 50V
C30	UR837100	C.EL 10uF 16V
C31	UR847100	C.EL 10uF 25V
C32	UR837220	C.EL 22uF 25V
C33	UR866470	C.EL 4.7uF 50V
C34	UR837220	C.EL 22uF 25V
C35	UR837220	C.EL 22uF 25V
C36	UR866330	C.EL 3.3uF 50V
C37	UA954180	C.MYLAR 0.018uF 50V
C38	FG612220	C.CE 220pF 50V
C39	FG612220	C.CE 220pF 50V
C40	UA954180	C.MYLAR 0.018uF 50V
C41	UR866100	C.EL 1uF 50V
C42	UR837470	C.EL 47uF 16V
C43	UR866470	C.EL 4.7uF 50V
C44	UR866470	C.EL 4.7uF 50V
C45	UA655100	C.MYLAR 0.1uF 50V
C46	UR865470	C.EL 0.47uF 50V
C47	UR866470	C.EL 4.7uF 50V
C48	UR866220	C.EL 2.2uF 50V
C49	UR866220	C.EL 2.2uF 50V
C50	UR866470	C.EL 4.7uF 50V
C51	UR866470	C.EL 4.7uF 50V

* New Parts

Schm Ref.	PART NO.	Description
C52	UR866470	C.EL 4.7uF 50V
C53	UR866220	C.EL 2.2uF 50V
C54	UA953270	C.MYLAR 2700pF 50V
C55	UR866470	C.EL 4.7uF 50V
C56	UR865220	C.EL 0.22uF 50V
C57	UB044100	C.CE.M.CHP 0.01uF 50V
C58	UR847100	C.EL 10uF 25V
C59	UB052100	C.CE.M.CHP 100pF 50V
C60	UB052100	C.CE.M.CHP 100pF 50V
C61	UA953270	C.MYLAR 2700pF 50V
C62	UR866470	C.EL 4.7uF 50V
C63	UR866470	C.EL 4.7uF 50V
C64	UA655100	C.MYLAR 0.1uF 50V
C65	UR866220	C.EL 2.2uF 50V
C66	UR866220	C.EL 2.2uF 50V
C67	UR866220	C.EL 2.2uF 50V
C68	UR865220	C.EL 0.22uF 50V
C69	UR848100	C.EL 100uF 25V
C70	UR866100	C.EL 1uF 50V
C71	UR837220	C.EL 22uF 25V
C72	UR837100	C.EL 10uF 16V
C73	UR847100	C.EL 10uF 25V
C74	UR847100	C.EL 10uF 25V
C75	UR837220	C.EL 22uF 25V
C76	UR866100	C.EL 1uF 50V
C77	UA655680	C.MYLAR 0.68uF 50V
C78	UA953680	C.MYLAR 6800pF 50V
C79	UA954220	C.MYLAR 0.022uF 50V
C80	UB013220	C.CE.M.CHP 2200pF 50V
C81	UR866100	C.EL 1uF 50V
C82	UA654750	C.MYLAR 0.075uF 50V
C83	UA953220	C.MYLAR 2200pF 50V
C84	UA954680	C.MYLAR 0.068uF 50V
C85	UR847100	C.EL 10uF 25V
C86	UR866100	C.EL 1uF 50V
C87	UR847100	C.EL 10uF 25V
C88	UA953220	C.MYLAR 2200pF 50V
C89	UA654750	C.MYLAR 0.075uF 50V
C90	UA954680	C.MYLAR 0.068uF 50V
C91	UR847100	C.EL 10uF 25V
C92	UB013220	C.CE.M.CHP 2200pF 50V
C93	UR866100	C.EL 1uF 50V
C94	UR847100	C.EL 10uF 25V
C95	UA954220	C.MYLAR 0.022uF 50V
C96	UA655680	C.MYLAR 0.68uF 50V
C97	UA953680	C.MYLAR 6800pF 50V
C98	UR866100	C.EL 1uF 50V
C99	UB052100	C.CE.M.CHP 100pF 50V
C100	UR837100	C.EL 10uF 16V
C101	UB052100	C.CE.M.CHP 100pF 50V
C102	UR837100	C.EL 10uF 16V
C103	VF992600	C.EL 4700uF 5.5V
C104	UB044100	C.CE.M.CHP 0.01uF 50V

* New Parts

P.C.B. INPUT

Schm Ref.	PART NO.	Description
C105	UB052100	C.CE.M.CHP 100pF 50V
C106	UB052100	C.CE.M.CHP 100pF 50V
C107	UB245100	C.CE.M.CHP 0.1uF 25V
C108	UB052100	C.CE.M.CHP 100pF 50V
C109	UR866220	C.EL 2.2uF 50V
C110	UB052100	C.CE.M.CHP 100pF 50V
C111	UB052100	C.CE.M.CHP 100pF 50V
C112	UB052100	C.CE.M.CHP 100pF 50V
C113	UB052100	C.CE.M.CHP 100pF 50V
C114	UA654750	C.MYLAR 0.075uF 50V
C115	UR847100	C.EL 10uF 25V
C116	UR866100	C.EL 1uF 50V
C117	UR847100	C.EL 10uF 25V
C118	UR847100	C.EL 10uF 25V
C119	UR866100	C.EL 1uF 50V
C120	UR847100	C.EL 10uF 25V
C121	UA654750	C.MYLAR 0.075uF 50V
C122	UB245100	C.CE.M.CHP 0.1uF 25V
C123	UB245100	C.CE.M.CHP 0.1uF 25V
C124	VJ900300	C.CE.M.CHP 22pF 50V
C125	VJ900300	C.CE.M.CHP 22pF 50V
C126	UB245100	C.CE.M.CHP 0.1uF 25V
C127	UR837100	C.EL 10uF 16V
C128	UR837100	C.EL 10uF 16V
C129	UR837100	C.EL 10uF 16V
C130	UR837100	C.EL 10uF 16V
C131	UR866100	C.EL 1uF 50V
C132	UB051470	C.CE.M.CHP 47pF 50V
C133	UB051470	C.CE.M.CHP 47pF 50V
C134	UN865470	C.EL 0.47uF 50V
C135	UR838100	C.EL 100uF 16V
C136	UR838100	C.EL 100uF 16V
C137	UB051470	C.CE.M.CHP 47pF 50V
C138	UB051470	C.CE.M.CHP 47pF 50V
C139	UR866100	C.EL 1uF 50V
C140	UB245100	C.CE.M.CHP 0.1uF 25V
C141	UB245100	C.CE.M.CHP 0.1uF 25V
C142	UR837100	C.EL 10uF 16V
C143	UR865470	C.EL 0.47uF 50V
C144	UR837100	C.EL 10uF 16V
C145	UR837100	C.EL 10uF 16V
C146	UR837100	C.EL 10uF 16V
C147	UR837220	C.EL 22uF 25V
C148	UB051470	C.CE.M.CHP 47pF 50V
C149	UB051470	C.CE.M.CHP 47pF 50V
C150	UR837220	C.EL 22uF 25V
C151	UR837100	C.EL 10uF 16V
C152	UR837100	C.EL 10uF 16V
C153	UR837100	C.EL 10uF 16V
C154	UR838330	C.EL 330uF 16V
C155	UB012330	C.CE.M.CHP 330pF 50V
C156	UB012330	C.CE.M.CHP 330pF 50V
C157	UR837100	C.EL 10uF 16V

* New Parts

Schm Ref.	PART NO.	Description
C158	UR837100	C.EL 10uF 16V
C159	UN866100	C.EL 1uF 50V
C160	UB052100	C.CE.M.CHP 100pF 50V
C165	VF467300	C.CE.TUBLR 0.01uF 16V(BG)
C401	UB245100	C.CE.M.CHP 0.1uF 25V
C404	UB245100	C.CE.M.CHP 0.1uF 25V
C405	UR837100	C.EL 10uF 16V
C406	UR837100	C.EL 10uF 16V
C421	UB044100	C.CE.M.CHP 0.01uF 50V
D3	VU992700	DIODE.ZENR MA8051-H 5.3V
D4	VT332900	DIODE 1SS355
D5	VT332900	DIODE 1SS355
D6	VU992900	DIODE.ZENR MA8056-L 5.4V
D7	VU995100	DIODE.ZENR MA8091-H 9.4V
D8	VT332900	DIODE 1SS355
D10	VT332900	DIODE 1SS355
D11	VV833200	DIODE 1SS380
D12	VT332900	DIODE 1SS355
D20	VU995300	DIODE.ZENR MA8100-L 9.7V
D21	VT332900	DIODE 1SS355
D22	VU992300	DIODE.ZENR MA8047-H 4.9V
D23	VU993000	DIODE.ZENR MA8056-M 5.6V
D24	VU993400	DIODE.ZENR MA8062-M 6.2V
D25	VU995300	DIODE.ZENR MA8100-L 9.7V
D26	VV220700	DIODE.SHOT RB501V-40
D400	VU991500	DIODE.ZENR MA8039-H 4.0V
HS1	VN126800	HEAT.SINK U0T-16C25-MP
IC1	XF494A00	IC LB1641
IC2	XD864A00	IC uPC1330HA
IC3	XG903A00	IC TC4052BF PX
IC4	XG903A00	IC TC4052BF PX
IC5	XF293A00	IC uPD4066G-T1
IC6	XV473A00	IC CXA1897Q
IC7	XV474A00	IC LC75393E
IC8	XW483A00	IC M38199MF 05FP
IC9	XF291A00	IC uPC4570G2
IC10	XG938A00	IC BA15218N
IC11	XF291A00	IC uPC4570G2
IC21	XF291A00	IC uPC4570G2
IC26	XR275A00	IC BA3835S
IC401	XV794A00	IC TC74VHC153F MULTI
L1	VM547800	COIL.BIAS 105KHz
L2	GE900780	COIL.BIAS 105KHz
L3	GE900780	COIL.BIAS 105KHz
L401	VD473700	COIL 60uH
L501	Vi491100	FER.CORE BP53RB19012080M
L502	Vi491100	FER.CORE BP53RB19012080M
PJ1	VV306900	JACK.PIN 4P
PJ4	VK437600	JACK.PIN 1P
Q1	VV655700	TR.DGT DTC144EKA
Q2	VE613300	TR 2SB1237 Q,R
Q3	iC174020	TR 2SC1740S R,S
Q4	VE613300	TR 2SB1237 Q,R

* New Parts

P.C.B. INPUT & MAIN

Schm Ref.	PART NO.	Description
Q5	VV655300	TR.DGT DTA144EKA
Q6	VV655300	TR.DGT DTA144EKA
Q7	VV655700	TR.DGT DTC144EKA
Q8	V3752400	TR.DGT DTC143TKA
Q9	VV655500	TR.DGT DTC124EKA
Q10	VV655500	TR.DGT DTC124EKA
Q11	iC174020	TR 2SC1740S R,S
Q12	iC174020	TR 2SC1740S R,S
Q13	iC174020	TR 2SC1740S R,S
Q14	VV655500	TR.DGT DTC124EKA
Q15	VV655700	TR.DGT DTC144EKA
Q16	VV655500	TR.DGT DTC124EKA
Q17	VE613400	TR 2SD1858 Q,R
Q18	VV655400	TR.DGT DTC114EKA
Q19	V3033500	TR.DGT DTC143XKA
Q20	VV655300	TR.DGT DTA144EKA
Q21	VZ725900	TR 2SD1938F S,T
Q22	VV655000	TR.DGT DTA114EKA
Q23	VZ725900	TR 2SD1938F S,T
Q24	VZ725900	TR 2SD1938F S,T
Q25	VK407600	TR 2SC4208A Q,R,S
Q26	VS883400	TR 2SD2394 E,F
Q27	VK407600	TR 2SC4208A Q,R,S
Q28	iA093320	TR 2SA933S Q,R
Q29	VV655700	TR.DGT DTC144EKA
Q30	VV655700	TR.DGT DTC144EKA
Q31	VV655700	TR.DGT DTC144EKA
Q32	VV655700	TR.DGT DTC144EKA
Q33	VK407600	TR 2SC4208A Q,R,S
Q34	VV655500	TR.DGT DTC124EKA
Q35	VV655500	TR.DGT DTC124EKA
Q36	VV655500	TR.DGT DTC124EKA
Q401	VK407600	TR 2SC4208A Q,R,S
R27	VP940100	R.MTL.OXD 33Ω 1W
R35	HV755150	R.CAR.FP 150Ω 1/4W
R59	HV754220	R.CAR.FP 22Ω 1/4W
R66	HV755560	R.CAR.FP 560Ω 1/4W
R95	HV753560	R.CAR.FP 5.6Ω 1/4W
R110	HV754680	R.CAR.FP 68Ω 1/4W
R155	HV754220	R.CAR.FP 22Ω 1/4W
R156	HV754220	R.CAR.FP 22Ω 1/4W
R251	HV754220	R.CAR.FP 22Ω 1/4W
R254	HV754220	R.CAR.FP 22Ω 1/4W
R258	HV754220	R.CAR.FP 22Ω 1/4W
R273	HV754220	R.CAR.FP 22Ω 1/4W
VR1	VJ693600	VR.TRIM B10KΩ
VR2	VJ694300	VR.TRIM B150KΩ
VR3	VJ694300	VR.TRIM B150KΩ
VR4	VJ693600	VR.TRIM B10KΩ
VR5	VJ693800	VR.TRIM B22KΩ
VR6	VJ693800	VR.TRIM B22KΩ
VR7	VJ692900	VR.TRIM B680Ω
XL1	VJ802400	RSNR.CE 8MHz

* New Parts

Schm Ref.	PART NO.	Description	
XL2	VQ328900 VJ828000 BB071360	RSNR.CRYS PIN SCR.TERM	32.768KHz IMSA-6024-03E 8.3x13
	V4001100	P.C.B.	MAIN
CB201	VL845300	CN.BS.PIN	9P
CB202	VB390700	CN.BS.PIN	11P
CB203	VL844800	CN.BS.PIN	4P
CB204	VP206500	HOLDER.FUS	EYF-52BC
CB205	VL845100	CN.BS.PIN	7P
CB206	VK026500	CN.BS.PIN	6P
CB207	Vi878400	CN.BS.PIN	6P
CB208	VB390300	CN.BS.PIN	7P
CB209	VP206500	HOLDER.FUS	EYF-52BC
CB215	VG879900	CN.BS.PIN	2P
CB216	VP206500	HOLDER.FUS	EYF-52BC
CB217	VP206500	HOLDER.FUS	EYF-52BC
C201	UR866470	C.EL	4.7uF 50V
C202	VF466900	C.CE.TUBLR	470pF 50V
C203	VF466900	C.CE.TUBLR	470pF 50V
C207	VF466800	C.CE.TUBLR	100pF 50V
C208	VF466800	C.CE.TUBLR	100pF 50V
C209	UR838330	C.EL	330uF 16V
C210	UR866470	C.EL	4.7uF 50V
C211	UR867470	C.EL	47uF 50V
C212	VG278400	C.CE.TUBLR	220pF 50V
C213	UR867100	C.EL	10uF 50V
C214	UR838100	C.EL	100uF 16V
C215	UR838100	C.EL	100uF 16V
C216	UR867100	C.EL	10uF 50V
C217	VG278400	C.CE.TUBLR	220pF 50V
C221	UR867220	C.EL	22uF 50V
C222	UR867220	C.EL	22uF 50V
C223	VF467300	C.CE.TUBLR	0.01uF 16V
C224	FG650300	C.CE	3pF 50V
C225	UT653220	C.PP	2200pF 100V
C226	UR798100	C.EL	100uF 100V
C227	UT653220	C.PP	2200pF 100V
C228	UR798100	C.EL	100uF 100V
C229	FG650300	C.CE	3pF 50V
C231	UR858100	C.EL	100uF 35V
C232	UR897100	C.EL	10uF 100V
C233	UR858100	C.EL	100uF 35V
C234	UR897100	C.EL	10uF 100V
C235	UR866470	C.EL	4.7uF 50V
C236	UA954470	C.MYLAR	0.047uF 50V
C237	UA954470	C.MYLAR	0.047uF 50V
C239	V3671100	C.EL	4700uF 71V
C240	V3671100	C.EL	4700uF 71V
C241	UR818100	C.EL	100uF 6.3V
C242	V3671000	C.EL	4700uF 35V

* New Parts

P.C.B. MAIN & OPERATION

Schm Ref.	PART NO.	Description
C243	V3671000	C.EL 4700uF 35V
C244	UA953220	C.MYLAR 2200pF 50V
C245	UA953220	C.MYLAR 2200pF 50V
C246	VF467300	C.CE.TUBLR 0.01uF 16V
C247	VF467300	C.CE.TUBLR 0.01uF 16V
C248	UA954100	C.MYLAR 0.01uF 50V
C249	UA954100	C.MYLAR 0.01uF 50V
C250	VR324800	C.MYLAR 0.047uF 100V
C251	VR324800	C.MYLAR 0.047uF 100V
C252	UA954470	C.MYLAR 0.047uF 50V
C253	UA954470	C.MYLAR 0.047uF 50V
C254	UA954100	C.MYLAR 0.01uF 50V
C255	UR739470	C.EL 4700uF 16V
C262	UR749100	C.EL 1000uF 25V
C263	VJ599100	C.CE.TUBLR 0.1uF 50V
C264	UA954100	C.MYLAR 0.01uF 50V
C265	UA954100	C.MYLAR 0.01uF 50V
C266	VS741700	C.CE.SAFTY 0.01uF 275V
C267	UR867100	C.EL 10uF 50V
C268	UR867470	C.EL 47uF 50V
C300	UR847100	C.EL 10uF 25V
D201	VG443100	DIODE.ZENR MTZJ27D 27V
D202	VG440500	DIODE.ZENR MTZJ13B 13V
D203	VG440500	DIODE.ZENR MTZJ13B 13V
D204	VG440500	DIODE.ZENR MTZJ13B 13V
D205	VN008700	DIODE 1SS270A
D206	VN008700	DIODE 1SS270A
D208	VN008700	DIODE 1SS270A
D209	VD631600	DIODE 1SS133,176,HSS104
D210	VG440500	DIODE.ZENR MTZJ13B 13V
D211	VN011400	DIODE.BRG D5SB20 5A 200V
D212	VN011400	DIODE.BRG D5SB20 5A 200V
D213	VN011300	DIODE.BRG D3SBA20 4A 200V
D214	VD631600	DIODE 1SS133,176,HSS104
D215	VR253700	DIODE.BRG S1NB20 1.0A 200V
D217	VG440500	DIODE.ZENR MTZJ13B 13V
F201	KB000750	FUSE.MNI T2.0A 250V
F202	KB001660	FUSE T1.6A 250V
G201	VR463400	TERM.GND D3.5 TP00385
HS201	V2692300	HEAT.SINK BPUE36-30
IC201	XW056A00	IC STK496-420Y 80W 2C
L201	VU038100	COIL 1.5uH
L202	VU038100	COIL 1.5uH
Q201	iC287820	TR 2SC2878 A,B
Q202	iC287820	TR 2SC2878 A,B
Q204	VR510800	TR 2SD2396 J,K
Q206	VS883300	TR 2SB1565 E,F
Q207	VS883300	TR 2SB1565 E,F
Q208	VP883000	TR 2SA893A D,E
Q209	VP883100	TR 2SC1890A D,E
Q210	VP883100	TR 2SC1890A D,E
Q212	iC287820	TR 2SC2878 A,B
Q213	iC174020	TR 2SC1740S R,S

* New Parts

	Schm Ref.	PART NO.	Description	
△ #	Q214	iC174020	TR	2SC1740S R,S
	Q216	iC174020	TR	2SC1740S R,S
	Q218	VR510800	TR	2SD2396 J,K
	Q219	iC174020	TR	2SC1740S R,S
	Q220	VP883000	TR	2SA893A D,E
△	R222	HV753100	R.CAR.FP	1Ω 1/4W
△	R225	HV753100	R.CAR.FP	1Ω 1/4W
△	R226	HV753100	R.CAR.FP	1Ω 1/4W
△	R227	VP940400	R.MTL.OXD	100Ω 1W
△	R230	VP940400	R.MTL.OXD	100Ω 1W
	R234	V3158200	R.MTL.PLAT	0.22Ω
	R237	V3158200	R.MTL.PLAT	0.22Ω
	R242	HV754100	R.CAR.FP	10Ω 1/4W
	R245	HV754100	R.CAR.FP	10Ω 1/4W
	R247	HV754100	R.CAR.FP	10Ω 1/4W
	R250	HV754100	R.CAR.FP	10Ω 1/4W
	R263	HV754470	R.CAR.FP	47Ω 1/4W
△	R269	HV753100	R.CAR.FP	1Ω 1/4W
△	R270	HV753100	R.CAR.FP	1Ω 1/4W
△	R277	HV753100	R.CAR.FP	1Ω 1/4W
	RY201	VU161600	RELAY	DC OSA-SS-224DM3
△	RY203	V2712300	RELAY	DC SDT-S-112LMR
△	T203	XV445A00	TRANS.PWR	
	TE201	V2996200	TERM.SP	4P CJ-9026-06-0203
		VJ828000	PIN	IMSA-6024-03E
		BB071360	SCR.TERM	8.3x13
		EP600140	SCR.BND.HD	3x10 MFZN2-BL
*		V4003300	P.C.B.	OPERATION
	CB804	VQ045400	CN.BS.PIN	25P
	CB805	VB858500	CN.BS.PIN	6P
	CB806	VQ045000	CN.BS.PIN	20P
	C822	UR818100	C.EL	100uF 6.3V
	C842	UB044470	C.CE.M.CHP	0.047uF 50V
	C843	UB245100	C.CE.M.CHP	0.1uF 25V
	C844	UB044470	C.CE.M.CHP	0.047uF 50V
	C845	UB245100	C.CE.M.CHP	0.1uF 25V
	C846	UR866100	C.EL	1uF 50V
	C847	UR866100	C.EL	1uF 50V
	C848	UA953220	C.MYLAR	2200pF 50V
	C849	UA953220	C.MYLAR	2200pF 50V
	C850	UA953680	C.MYLAR	6800pF 50V
	C851	UA953680	C.MYLAR	6800pF 50V
	C853	UB013100	C.CE.M.CHP	1000pF 50V
	C854	UB013100	C.CE.M.CHP	1000pF 50V
	C855	UR837100	C.EL	10uF 16V
	C858	UR837100	C.EL	10uF 16V
	C859	UR818100	C.EL	100uF 6.3V
	C860	UR818100	C.EL	100uF 6.3V
	C861	UR837100	C.EL	10uF 16V
	C862	UR837100	C.EL	10uF 16V

* New Parts

P.C.B. OPERATION & TUNER

Schm Ref.	PART NO.	Description
C863	UB012270	C.CE.M.CHP 270pF 50V
C864	UB012270	C.CE.M.CHP 270pF 50V
C868	UA953820	C.MYLAR 8200pF 50V
C870	UA953820	C.MYLAR 8200pF 50V
C872	UB013100	C.CE.M.CHP 1000pF 50V
C873	UB013100	C.CE.M.CHP 1000pF 50V
C874	UR818100	C.EL 100uF 6.3V
C875	UB245100	C.CE.M.CHP 0.1uF 25V
C876	UB052100	C.CE.M.CHP 100pF 50V
C877	UM388100	C.EL 100uF 10V
C878	UR866470	C.EL 4.7uF 50V
C879	UR866470	C.EL 4.7uF 50V
C880	UR866470	C.EL 4.7uF 50V
C881	UB245100	C.CE.M.CHP 0.1uF 25V
C890	UR837100	C.EL 10uF 16V
C901	UB052100	C.CE.M.CHP 100pF 50V
C902	UB245100	C.CE.M.CHP 0.1uF 25V
D802	VS132300	LED(re) SLR-325VCT31
D803	VR711400	LED(gr) SLR-325MC
D804	VU992900	DIODE.ZENR MA8056-L 5.4V
D810	V3253600	LED(bu) SELU1E50CM
IC810	XB247A00	IC uPC4570HA
IC811	XJ596A00	IC NJM78L05A
IC814	XT952A00	IC YSS247-D
IC815	XW059A00	IC M66004MASP
JK803	VT941600	JACK.MNI SW HTJ-035-17AB
Q801	iC287820	TR 2SC2878 A,B
Q802	iC287820	TR 2SC2878 A,B
Q803	iC174020	TR 2SC1740S R,S
Q804	iC174020	TR 2SC1740S R,S
Q805	iA093320	TR 2SA933S Q,R
Q806	iC174020	TR 2SC1740S R,S
R828	HV754330	R.CAR.FP 33Ω 1/4W
R829	HV754330	R.CAR.FP 33Ω 1/4W
R830	HV754680	R.CAR.FP 68Ω 1/4W
R831	HV754680	R.CAR.FP 68Ω 1/4W
R846	HV754390	R.CAR.FP 39Ω 1/4W
R851	HV754390	R.CAR.FP 39Ω 1/4W
R894	HV755100	R.CAR.FP 100Ω 1/4W
R895	HV755100	R.CAR.FP 100Ω 1/4W
R951	HV754220	R.CAR.FP 22Ω 1/4W
SW801	VR101400	SW.RT.ENC EC16B24204
SW802	VG392900	SW.TACT SKHVAA
SW803	VG392900	SW.TACT SKHVAA
SW804	VG392900	SW.TACT SKHVAA
SW805	VG392900	SW.TACT SKHVAA
SW806	VG392900	SW.TACT SKHVAA
SW807	VG392900	SW.TACT SKHVAA
SW808	VG392900	SW.TACT SKHVAA
SW809	VG392900	SW.TACT SKHVAA
SW810	VG392900	SW.TACT SKHVAA
SW811	VG392900	SW.TACT SKHVAA
SW812	VG392900	SW.TACT SKHVAA

* New Parts

Schm Ref.	PART NO.	Description
SW813	VG392900	SW.TACT SKHVAA
SW814	VG392900	SW.TACT SKHVAA
SW815	VG392900	SW.TACT SKHVAA
SW816	VG392900	SW.TACT SKHVAA
SW817	VG392900	SW.TACT SKHVAA
SW818	VG392900	SW.TACT SKHVAA
SW819	VG392900	SW.TACT SKHVAA
SW820	VG392900	SW.TACT SKHVAA
SW821	VG392900	SW.TACT SKHVAA
SW822	VG392900	SW.TACT SKHVAA
SW823	VG392900	SW.TACT SKHVAA
SW824	VG392900	SW.TACT SKHVAA
SW825	VT941400	SW.RT.ENC EC16B24304
SW826	VG392900	SW.TACT SKHVAA
SW827	VG392900	SW.TACT SKHVAA
SW828	VG392900	SW.TACT SKHVAA
SW829	VG392900	SW.TACT SKHVAA
SW830	VG392900	SW.TACT SKHVAA
SW831	VG392900	SW.TACT SKHVAA
SW832	VG392900	SW.TACT SKHVAA
SW833	VG392900	SW.TACT SKHVAA
SW834	VG392900	SW.TACT SKHVAA
SW835	VG392900	SW.TACT SKHVAA
SW836	VG392900	SW.TACT SKHVAA
U801	V2856200	L.DTCT PIC-28043TH2
V801	V2959000	FL.DSPLY 16-BT-63GK
VR802	V2969400	VR B50KΩ
VR804	V2969500	VR B100KΩ
	VJ828000	PIN IMSA-6024-03E
	VU351500	SPACER FL
	V3112800	SHEET.FL
	V3281500	SPACER.LED LDS-20K
*	V4000300	P.C.B./CHP TUNER/TU-02(A)
*	V4000400	P.C.B./CHP TUNER/TU-02(BG)
CB1	VQ961400	CN.BS.PIN 11P
C1	UB044100	C.CE.M.CHP 0.01uF 50V
C2	UR838100	C.EL 100uF 16V
C3	UB044100	C.CE.M.CHP 0.01uF 50V
C4	UR865220	C.EL 0.22uF 50V
C5	UB044100	C.CE.M.CHP 0.01uF 50V
C6	UB044100	C.CE.M.CHP 0.01uF 50V
C7	UB044100	C.CE.M.CHP 0.01uF 50V
C8	UB044100	C.CE.M.CHP 0.01uF 50V
C9	UB044470	C.CE.M.CHP 0.047uF 50V
C10	VA760500	C.CE 8pF 50V
C11	UR837100	C.EL 10uF 16V
C12	UB044100	C.CE.M.CHP 0.01uF 50V
C13	UR837470	C.EL 47uF 16V
C14	UB044470	C.CE.M.CHP 0.047uF 50V
C15	UB044100	C.CE.M.CHP 0.01uF 50V

* New Parts

P.C.B. TUNER

Schm Ref.	PART NO.	Description
C16	UB044470	C.CE.M.CHP 0.047uF 50V
C17	UR866100	C.EL 1uF 50V
C18	UR865470	C.EL 0.47uF 50V
C19	UR866100	C.EL 1uF 50V
C20	UR866100	C.EL 1uF 50V
C21	UB045100	C.CE.M.CHP 0.1uF 50V
C22	UB044470	C.CE.M.CHP 0.047uF 50V
C23	UR866220	C.EL 2.2uF 50V
C24	UR837330	C.EL 33uF 16V
C25	UB044470	C.CE.M.CHP 0.047uF 50V
C26	UR866330	C.EL 3.3uF 50V
C27	UB044470	C.CE.M.CHP 0.047uF 50V
C28	UR837220	C.EL 22uF 25V
C29	UB014270	C.CE.M.CHP 0.027uF 50V
C30	UB012680	C.CE.M.CHP 680pF 50V(A)
C30	UB052100	C.CE.M.CHP 100pF 50V(BG)
C31	UR837100	C.EL 10uF 16V
C32	UA954270	C.MYLAR 0.027uF 50V
C33	UA954270	C.MYLAR 0.027uF 50V
C34	UR837100	C.EL 10uF 16V
C35	UR837100	C.EL 10uF 16V
C36	UR866470	C.EL 4.7uF 50V
C37	UR866470	C.EL 4.7uF 50V
C38	UB013270	C.CE.M.CHP 2700pF 50V
C39	UB013270	C.CE.M.CHP 2700pF 50V
C40	UB044100	C.CE.M.CHP 0.01uF 50V
C41	UR837100	C.EL 10uF 16V
C57	UR817470	C.EL 47uF 6.3V
C58	UR817470	C.EL 47uF 6.3V
C59	UR838100	C.EL 100uF 16V
C60	UB052100	C.CE.M.CHP 100pF 50V
C61	UR866100	C.EL 1uF 50V
C62	UR837100	C.EL 10uF 16V
C63	VJ899500	C.CE.M.CHP 10pF 50V
C64	VJ899500	C.CE.M.CHP 10pF 50V
C65	UB052100	C.CE.M.CHP 100pF 50V
C67	UR817470	C.EL 47uF 6.3V(BG)
C68	UB012330	C.CE.M.CHP 330pF 50V(BG)
C69	UR817470	C.EL 47uF 6.3V(BG)
C70	UR817470	C.EL 47uF 6.3V(BG)
C71	UB012560	C.CE.M.CHP 560pF 50V(BG)
C72	VJ900500	C.CE.M.CHP 27pF 50V(BG)
C73	VJ900500	C.CE.M.CHP 27pF 50V(BG)
C74	UB045100	C.CE.M.CHP 0.1uF 50V(BG)
D1	VU995000	DIODE.ZENR MA8091-M 9.1V
D2	VT332900	DIODE 1SS355
D3	VT332900	DIODE 1SS355
D4	VT332900	DIODE 1SS355
D5	VU993000	DIODE.ZENR MA8056-M 5.6V
D11	VU995400	DIODE.ZENR MA8100-M 10V
IC1	XV228A00	IC LA1838 F AM IF
IC2	XV229A00	IC LC72131M
IC4	XV230A00	IC LC72720NM(BG)

* New Parts

Schm Ref.	PART NO.	Description
L1	GG000560	FLTR.CE SFE10.7MS3GHY-A(A)
* L1	V4545200	FLTR.CE SFE10.7MJA1(BG)
L2	GG000560	FLTR.CE SFE10.7MS3GHY-A(A)
* L2	V4545200	FLTR.CE SFE10.7MJA1(BG)
L3	VU887900	COIL 10uH
L4	VU434500	FLTR.CE 450K PCF -049A
L5	VR888000	FLTR.LC 19KHz
L6	VR888000	FLTR.LC 19KHz
L7	VU889500	COIL 220uH(BG)
L8	VU889500	COIL 220uH(BG)
L9	VU889500	COIL 220uH(BG)
PK1	VU134500	TUNER.FM TFFJ4E515A
PK2	VU333700	COIL.RF.AM 940536051A
Q1	iC053540	TR 2SC535 A,B,C
Q2	VD678500	TR.DGT DTA114ES
Q3	iC181510	TR 2SC1815 Y
R1	HV755150	R.CAR.FP 150Ω 1/4W
R3	HV755220	R.CAR.FP 220Ω 1/4W
R17	VV901100	R.MTL.OXD 120Ω 1W
R40	HV755680	R.CAR.FP 680Ω 1/4W
TE1	VU477800	TERM.ANT AJ-2038-040
XL1	V2717200	FLTR.CE 10.7 CDA10.7MG74-A
XL2	VY734600	RSNR.CRYS 7.2MHz
* XL4	V3930900	RSNR.CRYS 4.332MHz(BG)
	BB071360	SCR.TERM 8.3x13

* New Parts

P.C.B. MD MAIN

Schm				
Ref.	PART NO.	Description	Remarks	
*	AA02260	P.C.B.	MAIN	92LPWB2976MDSS
* C1100	AA02530	C.CHP	4.7uF 10V	RCKZ0003AWZZ
* C1101	AA02750	C.CHP	1uF 6.3V	VCKYTV0JB105K
* C1102	AA02770	C.CHP	1uF 16V	VCKYTV1CF105K
* C1103	AA02800	C.CHP	0.027uF 50V	VCKYTV1HB273K
* C1104	AA02810	C.CHP	0.033uF 50V	VCKYTV1HB333K
* C1105	AA02690	C.CHP	3300pF 50V	VCKYCY1HB332K
* C1106	AA02750	C.CHP	1uF 6.3V	VCKYTV0JB105K
* C1107	AA02650	C.CHP	0.033uF 16V	VCKYCY1CB333K
* C1108	AA02760	C.CHP	0.47uF 16V	VCKYTV1CB474K
* C1109	AA02750	C.CHP	1uF 6.3V	VCKYTV0JB105K
* C1110	AA02820	C.CHP	4700pF 50V	VCKYTV1HB472K
* C1111	AA02760	C.CHP	0.47uF 16V	VCKYTV1CB474K
* C1112	AA02590	C.CHP	330pF 50V	VCCCCY1HH331J
* C1113	AA02580	C.CHP	270pF 50V	VCCCCY1HH271J
* C1114	AA02580	C.CHP	270pF 50V	VCCCCY1HH271J
* C1115	AA02580	C.CHP	270pF 50V	VCCCCY1HH271J
* C1116	AA02580	C.CHP	270pF 50V	VCCCCY1HH271J
* C1117	AA02580	C.CHP	270pF 50V	VCCCCY1HH271J
* C1118	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1119	AA02750	C.CHP	1uF 6.3V	VCKYTV0JB105K
* C1120	AA02830	C.CHP	0.01uF 50V	VCKYTV1HF103Z
* C1200	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1201	AA02520	C.CHP	10uF 10V	RCKZ0002AWZZ
* C1202	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1203	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1204	AA02660	C.CHP	0.047uF 16V	VCKYCY1CB473K
* C1205	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1206	AA02790	C.CHP	1200pF 50V	VCKYTV1HB122K
* C1207	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1208	AA02550	C.CHP	12pF 50V	VCCCCY1HH120J
* C1209	AA02550	C.CHP	12pF 50V	VCCCCY1HH120J
* C1210	AA02560	C.CHP	22pF 50V	VCCCCY1HH220J
* C1300	AA02600	C.CHP	120pF 50V	VCCCTV1HH121J
* C1301	AA02640	C.CHP	0.027uF 16V	VCKYCY1CB273K
* C1302	AA02520	C.CHP	10uF 10V	RCKZ0002AWZZ
* C1303	AA02530	C.CHP	4.7uF 10V	RCKZ0003AWZZ
* C1304	AA02520	C.CHP	10uF 10V	RCKZ0002AWZZ
* C1400	AA02630	C.CHP	0.022uF 16V	VCKYCY1CB223K
* C1401	AA02630	C.CHP	0.022uF 16V	VCKYCY1CB223K
* C1402	AA02700	C.CHP	680pF 50V	VCKYCY1HB681K
* C1403	AA02660	C.CHP	0.047uF 16V	VCKYCY1CB473K
* C1404	AA02630	C.CHP	0.022uF 16V	VCKYCY1CB223K
* C1405	AA02700	C.CHP	680pF 50V	VCKYCY1HB681K
* C1406	AA02630	C.CHP	0.022uF 16V	VCKYCY1CB223K
* C1407	AA02660	C.CHP	0.047uF 16V	VCKYCY1CB473K
* C1408	AA02630	C.CHP	0.022uF 16V	VCKYCY1CB223K
* C1409	AA02670	C.CHP	0.1uF 25V	VCKYCY1EF104Z
* C1410	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1411	AA02590	C.CHP	330pF 50V	VCCCCY1HH331J
* C1501	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1502	AA02570	C.CHP	220pF 50V	VCCCCY1HH221J
* C1503	AA02720	C.CHP	0.33uF 16V	VCKYTV1CF105Z

* New Parts

Schm				
Ref.	PART NO.	Description	Remarks	
* C1504	AA02570	C.CHP	220pF 50V	VCCCCY1HH221J
* C1505	AA02540	C.CHP	100pF 50V	VCCCCY1HH101J
* C1506	AA02540	C.CHP	100pF 50V	VCCCCY1HH101J
* C1508	AA02660	C.CHP	0.047uF 16V	VCKYCY1CB473K
* C1509	AA02660	C.CHP	0.047uF 16V	VCKYCY1CB473K
* C1511	AA02560	C.CHP	22pF 50V	VCCCCY1HH220J
* C1600	AA02730	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1601	AA02610	C.CHP	820pF 50V	VCCSCY1HL821J
* C1602	AA02610	C.CHP	820pF 50V	VCCSCY1HL821J
* C1603	AA02610	C.CHP	820pF 50V	VCCSCY1HL821J
* C1604	AA02610	C.CHP	820pF 50V	VCCSCY1HL821J
* C1606	AA02520	C.CHP	10uF 10V	RCKZ0002AWZZ
* C1607	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1608	AA02490	C.EL.CHP	100uF 10V	VCEAPS107AF1A
* C1610	AA02530	C.CHP	4.7uF 10V	RCKZ0003AWZZ
* C1611	AA02710	C.CHP	8200pF 50V	VCKYCY1HB822K
* C1612	AA02710	C.CHP	8200pF 50V	VCKYCY1HB822K
* C1613	AA02680	C.CHP	1500pF 50V	VCKYCY1HB152K
* C1615	AA02680	C.CHP	1500pF 50V	VCKYCY1HB152K
* C1616	AA02490	C.EL.CHP	100pF 10V	VCEAPS107AF1A
* C1619	AA02590	C.CHP	330pF 50V	VCCCCY1HH331J
* C1700	AA02510	C.EL.CHP	47uF 4V	VCEAPS476AF0G
* C1701	AA02510	C.EL.CHP	47uF 4V	VCEAPS476AF0G
* C1702	AA02620	C.CHP	0.01uF 16V	VCKYCY1CB103K
* C1703	AA02660	C.CHP	0.047uF 16V	VCKYCY1CB473K
* C1704	AA02510	C.EL.CHP	47uF 4V	VCEAPS476AF0G
* C1705	AA02660	C.CHP	0.047uF 16V	VCKYCY1CB473K
* C1706	AA02830	C.CHP	0.01uF 50V	VCKYTV1HF103Z
* C1707	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1708	AA02830	C.CHP	0.01uF 50V	VCKYTV1HF103Z
* C1709	AA02830	C.CHP	0.01uF 50V	VCKYTV1HF103Z
* C1710	AA02480	C.EL.CHP	10uF 16V	RCEZ1620AFZZ
* C1711	AA02510	C.EL.CHP	47uF 4V	VCEAPS476AF0G
* C1712	AA02480	C.EL.CHP	10uF 16V	RCEZ1620AFZZ
* C1713	AA02830	C.CHP	0.01uF 50V	VCKYTV1HF103Z
* C1714	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* C1715	AA02830	C.CHP	0.01uF 50V	VCKYTV1HF103Z
* C1716	AA02510	C.EL.CHP	47uF 4V	VCEAPS476AF0G
* C1800	AA02500	C.EL.CHP	220uF 4V	VCEAPS227AF0G
* C1801	AA02520	C.CHP	10uF 10V	RCKZ0002AWZZ
* C1802	AA02520	C.CHP	10uF 10V	RCKZ0002AWZZ
* C1803	AA02490	C.EL.CHP	100pF 10V	VCEAPS107AF1A
* C1804	AA02740	C.CHP	2.2uF 16V	VCKYTV1CF225Z
* C1805	AA02780	C.CHP	1uF 16V	VCKYTV1CF105Z
* CN1101	AA01400	CN.PLUG	28P	QCNCWY028AFZZ
* CN1300	AA01380	CN.PLUG	2P	QCNCM891BAFZZ
* CN1401	AA01390	CN.PLUG	5P	QCNCWXC05AFZZ
* CN1501	AA01410	CN.PLUG	28P	QCNCWZ028AFZZ
* CN1602	AA01350	CN.PLUG	2P	QCNCM890BAF02
* CN1603	AA01370	CN.PLUG	2P	QCNCM890BAFZZ
* CN1604	AA01360	CN.PLUG	2P	QCNCM890BAF06
* CW1901	AA01340	CN.FLT	5P	QCNCWN1042AWZZ
* CW1903	AA02360	CN.BS.PIN	2P	QCNCWN1044AWZZ

* New Parts

P.C.B. MD MAIN

Schm	Ref.	PART NO.	Description	Remarks
*	D1300	AAX02470	DIODE	SB0209CP VHDSB0209CP1
*	D1301	AAX02470	DIODE	SB0209CP VHDSB0209CP1
*	D1401	AAX02460	DIODE	SB00703Q VHDSB00703Q1
*	IC1101	AAX02180	IC	IR3R55 VHIR3R55//1
*	IC1201	AAX04880	IC	LR376484 VHILR3764841
*	IC1202	AAX02150	IC	IX2474AF RHIX2474AFZZ
*	IC1300	AAX02160	IC	74ACT02F VHI74ACT02F1
*	IC1401	AAX02140	IC	IX0290AW RHIX0290AWZZ
*	IC1402	AAX02200	IC	S29294A VHIS29294A/1
*	IC1601	AAX02170	IC	BA5984FP VHIBA5984FP1
*	IC1701	AAX02210	IC	UDA1344 VHIUDA1344/1
*	IC1702	AAX02190	IC	NJM431U VHINJM431U/1
*	IC1801	AAX02220	IC	XC62EP32 VHIXC62EP321
*	L1100	AAX02230	IC	0.47uH VPBNNR47K0000
*	L1101	AAX02330	COIL	10uH VPBNN100K0000
*	L1200	AAX02340	COIL	4.7uH VPBNN47K0000
*	L1201	AAX02230	COIL	0.47uH VPBNNR47K0000
*	L1300	AAX02350	COIL	47uH VPNNM470K0000
*	L1301	AAX02350	COIL	47uH VPNNM470K0000
*	L1501	AAX02320	COIL	1uH RCILZ0016AWZZ
*	L1503	AAX02340	COIL	4.7uH VPBNN47K0000
*	L1600	AAX02320	COIL	1uH RCILZ0016AWZZ
*	L1700	AAX02330	COIL	10uH VPBNN100K0000
*	L1701	AAX02330	COIL	10uH VPBNN100K0000
*	Q1300	AAX02100	FET	2SK2909 VS2SK2909//1
*	Q1301	AAX02090	FET	2SK1473 VS2SK1473//1
*	Q1302	AAX02100	FET	2SK2909 VS2SK2909//1
*	Q1303	AAX02090	FET	2SK1473 VS2SK1473//1
*	Q1400	AAX02890	TR	RNC1404 VSRNC1404//1
*	Q1401	AAX02890	TR	RNC1404 VSRNC1404//1
*	Q1402	AAX02880	TR	RN2404 VSRN2404//1
*	Q1403	AAX02880	TR	RN2404 VSRN2404//1
*	Q1500	AAX02900	TR	RNC1407 VSRNC1407//1
*	Q1700	AAX02860	TR	2SC2412KR VS2SC2412KR1
*	Q1701	AAX02890	TR	RNC1404 VSRNC1404//1
*	Q1702	AAX02840	TR	2SA1162G VS2SA1162G/1
*	Q1800	AAX02900	TR	RNC1407 VSRNC1407//1
*	Q1801	AAX02840	TR	2SA1162G VS2SA1162G/1
*	Q1802	AAX02900	TR	RNC1407 VSRNC1407//1
*	Q1803	AAX02870	TR	RN1406 VSRN1406//1
*	Q1804	AAX02850	TR	2SA1314C VS2SA1314C/1
*	Q1805	AAX02850	TR	2SA1314C VS2SA1314C/1
*	Q1806	AAX02870	TR	RN1406 VSRN1406//1
*	R1100	AAX03080	R.CAR.CHP	27Ω 1/8W VRSTQ2BB270J
*	R1101	AAX01880	R.CAR.CHP	1Ω 1/16W VRSCY1JB1R0J
*	R1102	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1103	AAX02020	R.CAR.CHP	390KΩ 1/16W VRSCY1JB394J
*	R1105	AAX01810	R.CAR.CHP	1.2KΩ 1/16W VRSCY1JB122J
*	R1106	AAX02060	R.CAR.CHP	56KΩ 1/16W VRSCY1JB563J
*	R1107	AAX02050	R.CAR.CHP	560Ω 1/16W VRSCY1JB561J
*	R1108	AAX01910	R.CAR.CHP	22KΩ 1/16W VRSCY1JB223J
*	R1109	AAX01910	R.CAR.CHP	22KΩ 1/16W VRSCY1JB223J
*	R1110	AAX01910	R.CAR.CHP	22KΩ 1/16W VRSCY1JB223J

* New Parts

Schm	Ref.	PART NO.	Description	Remarks
*	R1111	AAX01910	R.CAR.CHP	22KΩ 1/16W VRSCY1JB223J
*	R1112	AAX01910	R.CAR.CHP	22KΩ 1/16W VRSCY1JB223J
*	R1113	AAX01710	R.CAR.CHP	0Ω 1/16W VRSCY1JB000J
*	R1200	AAX01820	R.CAR.CHP	120KΩ 1/16W VRSCY1JB124J
*	R1201	AAX01820	R.CAR.CHP	120KΩ 1/16W VRSCY1JB124J
*	R1202	AAX01860	R.CAR.CHP	150KΩ 1/16W VRSCY1JB154D
*	R1203	AAX01860	R.CAR.CHP	150KΩ 1/16W VRSCY1JB154D
*	R1204	AAX02070	R.CAR.CHP	62KΩ 1/16W VRSCY1JB623J
*	R1205	AAX02070	R.CAR.CHP	62KΩ 1/16W VRSCY1JB623J
*	R1206	AAX01990	R.CAR.CHP	33KΩ 1/16W VRSCY1JB333J
*	R1207	AAX01990	R.CAR.CHP	33KΩ 1/16W VRSCY1JB333J
*	R1208	AAX01900	R.CAR.CHP	220Ω 1/16W VRSCY1JB221J
*	R1209	AAX01730	R.CAR.CHP	100Ω 1/16W VRSCY1JB101J
*	R1210	AAX01900	R.CAR.CHP	220Ω 1/16W VRSCY1JB221J
*	R1211	AAX01900	R.CAR.CHP	220Ω 1/16W VRSCY1JB221J
*	R1212	AAX02030	R.CAR.CHP	47Ω 1/16W VRSCY1JB470J
*	R1214	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1215	AAX01790	R.CAR.CHP	1MΩ 1/16W VRSCY1JB105J
*	R1216	AAX01710	R.CAR.CHP	0Ω 1/16W VRSCY1JB000J
*	R1217	AAX01830	R.CAR.CHP	150Ω 1/16W VRSCY1JB151J
*	R1219	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1220	AAX01710	R.CAR.CHP	0Ω 1/16W VRSCY1JB000J
*	R1221	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1222	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1223	AAX01730	R.CAR.CHP	100Ω 1/16W VRSCY1JB101J
*	R1224	AAX01710	R.CAR.CHP	0Ω 1/16W VRSCY1JB000J
*	R1300	AAX03090	R.CAR.CHP	0Ω 1/10W VRSTV2AB000J
*	R1301	AAX01720	R.CAR.CHP	10Ω 1/16W VRSCY1JB100J
*	R1302	AAX03090	R.CAR.CHP	0Ω 1/10W VRSTV2AB000J
*	R1303	AAX03060	R.CAR.CHP	0Ω 1/8W VRSTQ2BB000J
*	R1304	AAX03150	R.CAR.CHP	680Ω 1/10W VRSTV2AB681J
*	R1400	AAX01940	R.CAR.CHP	2.7KΩ 1/16W VRSCY1JB272J
*	R1401	AAX01840	R.CAR.CHP	1.5KΩ 1/16W VRSCY1JB152J
*	R1402	AAX01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1403	AAX01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1404	AAX01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1405	AAX01980	R.CAR.CHP	3.3KΩ 1/16W VRSCY1JB332J
*	R1406	AAX01780	R.CAR.CHP	100KΩ 1/16W VRSCY1JB104J
*	R1407	AAX01780	R.CAR.CHP	100KΩ 1/16W VRSCY1JB104J
*	R1408	AAX01980	R.CAR.CHP	3.3KΩ 1/16W VRSCY1JB332J
*	R1409	AAX01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1410	AAX01980	R.CAR.CHP	3.3KΩ 1/16W VRSCY1JB332J
*	R1411	AAX01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1412	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1413	AAX01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1414	AAX01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1415	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1416	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1417	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1419	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1420	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1421	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1422	AAX01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J

* New Parts

P.C.B. MD MAIN & OTHER

Schm	Ref.	PART NO.	Description	Remarks
*	R1423	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1424	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1425	AA01780	R.CAR.CHP	100KΩ 1/16W VRSCY1JB104J
*	R1426	AA01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1427	AA01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1428	AA01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1429	AA02040	R.CAR.CHP	47KΩ 1/16W VRSCY1JB473J
*	R1430	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1444	AA01730	R.CAR.CHP	100Ω 1/16W VRSCY1JB101J
*	R1510	AA03050	R.CAR.CHP	8.2KΩ 1/16W VRSCY1JB822J
*	R1511	AA03050	R.CAR.CHP	8.2KΩ 1/16W VRSCY1JB822J
*	R1512	AA02030	R.CAR.CHP	47Ω 1/16W VRSCY1JB470J
*	R1513	AA02030	R.CAR.CHP	47Ω 1/16W VRSCY1JB470J
*	R1514	AA01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1515	AA01870	R.CAR.CHP	1.8KΩ 1/16W VRSCY1JB182J
*	R1516	AA01870	R.CAR.CHP	1.8KΩ 1/16W VRSCY1JB182J
*	R1517	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1518	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1518	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1519	AA01800	R.CAR.CHP	120Ω 1/16W VRSCY1JB121J
*	R1520	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1521	AA03020	R.CAR.CHP	6.8KΩ 1/16W VRSCY1JB682J
*	R1522	AA01900	R.CAR.CHP	220Ω 1/16W VRSCY1JB221J
*	R1523	AA01710	R.CAR.CHP	0Ω 1/16W VRSCY1JB000J
*	R1525	AA01980	R.CAR.CHP	3.3KΩ 1/16W VRSCY1JB332J
*	R1526	AA01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1527	AA03050	R.CAR.CHP	8.2KΩ 1/16W VRSCY1JB822J
*	R1528	AA03050	R.CAR.CHP	8.2KΩ 1/16W VRSCY1JB822J
*	R1529	AA03050	R.CAR.CHP	8.2KΩ 1/16W VRSCY1JB822J
*	R1530	AA01900	R.CAR.CHP	220Ω 1/16W VRSCY1JB221J
*	R1531	AA01900	R.CAR.CHP	220Ω 1/16W VRSCY1JB221J
*	R1532	AA01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1535	AA03130	R.CAR.CHP	47Ω 1/10W VRSTV2AB470J
*	R1536	AA03090	R.CAR.CHP	0Ω 1/10W VRSTV2AB000J
*	R1537	AA03090	R.CAR.CHP	0Ω 1/10W VRSTV2AB000J
*	R1538	AA03090	R.CAR.CHP	0Ω 1/10W VRSTV2AB000J
*	R1539	AA03090	R.CAR.CHP	0Ω 1/10W VRSTV2AB000J
*	R1600	AA02080	R.CAR.CHP	6.8KΩ 1/16W VRSCY1JB682D
*	R1601	AA02080	R.CAR.CHP	6.8KΩ 1/16W VRSCY1JB682D
*	R1605	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1606	AA01760	R.CAR.CHP	10KΩ 1/16W VRSCY1JB103J
*	R1612	AA01890	R.CAR.CHP	200KΩ 1/16W VRSCY1JB204D
*	R1614	AA01770	R.CAR.CHP	100KΩ 1/16W VRSCY1JB104D
*	R1616	AA03020	R.CAR.CHP	6.8KΩ 1/16W VRSCY1JB682J
*	R1617	AA03020	R.CAR.CHP	6.8KΩ 1/16W VRSCY1JB682J
*	R1618	AA01850	R.CAR.CHP	15KΩ 1/16W VRSCY1JB153J
*	R1620	AA01850	R.CAR.CHP	15KΩ 1/16W VRSCY1JB153J
*	R1700	AA02010	R.CAR.CHP	39KΩ 1/16W VRSCY1JB393J
*	R1701	AA01960	R.CAR.CHP	30KΩ 1/16W VRSCY1JB303J
*	R1702	AA01740	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102D
*	R1703	AA01970	R.CAR.CHP	3.3KΩ 1/16W VRSCY1JB332D
*	R1704	AA03040	R.CAR.CHP	820Ω 1/16W VRSCY1JB821J
*	R1705	AA02010	R.CAR.CHP	39KΩ 1/16W VRSCY1JB393J

* New Parts

Schm	Ref.	PART NO.	Description	Remarks
*	R1706	AA01790	R.CAR.CHP	1MΩ 1/16W VRSCY1JB105J
*	R1707	AA01750	R.CAR.CHP	1KΩ 1/16W VRSCY1JB102J
*	R1708	AA01950	R.CAR.CHP	27KΩ 1/16W VRSCY1JB273J
*	R1709	AA02010	R.CAR.CHP	39KΩ 1/16W VRSCY1JB393J
*	R1710	AA03030	R.CAR.CHP	680KΩ 1/16W VRSCY1JB684J
*	R1711	AA03100	R.CAR.CHP	12Ω 1/10W VRSTV2AB120J
*	R1712	AA03100	R.CAR.CHP	12Ω 1/10W VRSTV2AB120J
*	R1713	AA01780	R.CAR.CHP	100KΩ 1/16W VRSCY1JB104J
*	R1801	AA01930	R.CAR.CHP	270Ω 1/16W VRSCY1JB271J
*	R1802	AA01920	R.CAR.CHP	220K 1/16W VRSCY1JB224D
*	R1803	AA01770	R.CAR.CHP	100KΩ 1/16W VRSCY1JB104D
*	R1804	AA02000	R.CAR.CHP	390Ω 1/16W VRSCY1JB391J
*	R1805	AA01930	R.CAR.CHP	270Ω 1/16W VRSCY1JB271J
*	R1806	AA03120	R.CAR.CHP	1Ω 1/10W VRSTV2AB1R0J
*	R1807	AA01950	R.CAR.CHP	27KΩ 1/16W VRSCY1JB273J
*	R1808	AA01870	R.CAR.CHP	1.8KΩ 1/16W VRSCY1JB182J
*	R1809	AA03070	R.CAR.CHP	1Ω 1/8W VRSTQ2BB1R0J
*	R1811	AA03070	R.CAR.CHP	1Ω 1/8W VRSTQ2BB1R0J
*	R1811	AA03070	R.CAR.CHP	1Ω 1/8W VRSTQ2BB1R0J
*	XL1201	AA01660	RSNR.CRYS	RCRSC0001AWZZ
*	CN1901	AA02450	CN.SOKT	5P QCNCW037EAWZZ
*	R1901	AA03140	R.CAR.CHP	470Ω 1/10W VRSTV2AB471J
*	R1902	AA03110	R.CAR.CHP	1.8KΩ 1/10W VRSTV2AB182J
*	R1903	AA03160	R.CAR.CHP	820Ω 1/10W VRSTV2AB821J
*	R1904	AA03160	R.CAR.CHP	820Ω 1/10W VRSTV2AB821J
*	SW1952	AA02410	SW	QSWP0006AWZZ
*	SW1953	AA02400	SW	QSWM0157AFZZ
*	SW1954	AA02380	SW	QSWM0002AWZZ
*	SW1955	AA02380	SW	QSWM0002AWZZ
*	SW1956	AA02390	SW	QSWM0156AFZZ
*		AA01420	P.W.B.	MECHANISM QPWB0400AWZZ

* New Parts

CHIP RESISTOR

Schm Ref.	PART NO.	Description
	RD250000	R.CAR.CHP 0Ω 1/10W
	RD253100	R.CAR.CHP 1Ω 1/10W
	RD253220	R.CAR.CHP 2.2Ω 1/10W
	RD253470	R.CAR.CHP 4.7Ω 1/10W
	RD254100	R.CAR.CHP 10Ω 1/10W
	RD254220	R.CAR.CHP 22Ω 1/10W
	RD254330	R.CAR.CHP 33Ω 1/10W
	RD254510	R.CAR.CHP 51Ω 1/10W
	RD254680	R.CAR.CHP 68Ω 1/10W
	RD254750	R.CAR.CHP 75Ω 1/10W
	RD255100	R.CAR.CHP 100Ω 1/10W
	RD255120	R.CAR.CHP 120Ω 1/10W
	RD255220	R.CAR.CHP 220Ω 1/10W
	RD255270	R.CAR.CHP 270Ω 1/10W
	RD255330	R.CAR.CHP 330Ω 1/10W
	RD255360	R.CAR.CHP 360Ω 1/10W
	RD255430	R.CAR.CHP 430Ω 1/10W
	RD255470	R.CAR.CHP 470Ω 1/10W
	RD255510	R.CAR.CHP 510Ω 1/10W
	RD255560	R.CAR.CHP 560Ω 1/10W
	RD255680	R.CAR.CHP 680Ω 1/10W
	RD256100	R.CAR.CHP 1KΩ 1/10W
	RD256120	R.CAR.CHP 1.2KΩ 1/10W
	RD256150	R.CAR.CHP 1.5KΩ 1/10W
	RD256180	R.CAR.CHP 1.8KΩ 1/10W
	RD256200	R.CAR.CHP 2KΩ 1/10W
	RD256220	R.CAR.CHP 2.2KΩ 1/10W
	RD256240	R.CAR.CHP 2.4KΩ 1/10W
	RD256270	R.CAR.CHP 2.7KΩ 1/10W
	RD256300	R.CAR.CHP 3KΩ 1/10W
	RD256330	R.CAR.CHP 3.3KΩ 1/10W
	RD256390	R.CAR.CHP 3.9KΩ 1/10W
	RD256430	R.CAR.CHP 4.3KΩ 1/10W
	RD256470	R.CAR.CHP 4.7KΩ 1/10W
	RD256510	R.CAR.CHP 5.1KΩ 1/10W
	RD256560	R.CAR.CHP 5.6KΩ 1/10W
	RD256620	R.CAR.CHP 6.2KΩ 1/10W
	RD256680	R.CAR.CHP 6.8KΩ 1/10W
	RD256820	R.CAR.CHP 8.2KΩ 1/10W
	RD256910	R.CAR.CHP 9.1KΩ 1/10W
	RD257100	R.CAR.CHP 10KΩ 1/10W
	RD257120	R.CAR.CHP 12KΩ 1/10W
	RD257150	R.CAR.CHP 15KΩ 1/10W
	RD257160	R.CAR.CHP 16KΩ 1/10W
	RD257180	R.CAR.CHP 18KΩ 1/10W
	RD257200	R.CAR.CHP 20KΩ 1/10W
	RD257220	R.CAR.CHP 22KΩ 1/10W
	RD257270	R.CAR.CHP 27KΩ 1/10W
	RD257300	R.CAR.CHP 30KΩ 1/10W
	RD257330	R.CAR.CHP 33KΩ 1/10W
	RD257390	R.CAR.CHP 39KΩ 1/10W
	RD257430	R.CAR.CHP 43KΩ 1/10W
	RD257470	R.CAR.CHP 47KΩ 1/10W

* New Parts

Schm Ref.	PART NO.	Description
	RD257510	R.CAR.CHP 51KΩ 1/10W
	RD257560	R.CAR.CHP 56KΩ 1/10W
	RD257680	R.CAR.CHP 68KΩ 1/10W
	RD257750	R.CAR.CHP 75KΩ 1/10W
	RD257820	R.CAR.CHP 82KΩ 1/10W
	RD257910	R.CAR.CHP 91KΩ 1/10W
	RD258100	R.CAR.CHP 100KΩ 1/10W
	RD258120	R.CAR.CHP 120KΩ 1/10W
	RD258150	R.CAR.CHP 150KΩ 1/10W
	RD258180	R.CAR.CHP 180KΩ 1/10W
	RD258220	R.CAR.CHP 220KΩ 1/10W
	RD258470	R.CAR.CHP 470KΩ 1/10W
	RD259100	R.CAR.CHP 1MΩ 1/10W
	RD259220	R.CAR.CHP 2.2MΩ 1/10W
	RD259750	R.CAR.CHP 7.5MΩ 1/10W
	RD556100	R.CAR.CHP 1KΩ 1/10W
	RD557120	R.CAR.CHP 12KΩ 1/10W

* New Parts

GX-900

EXPLODED VIEW

1

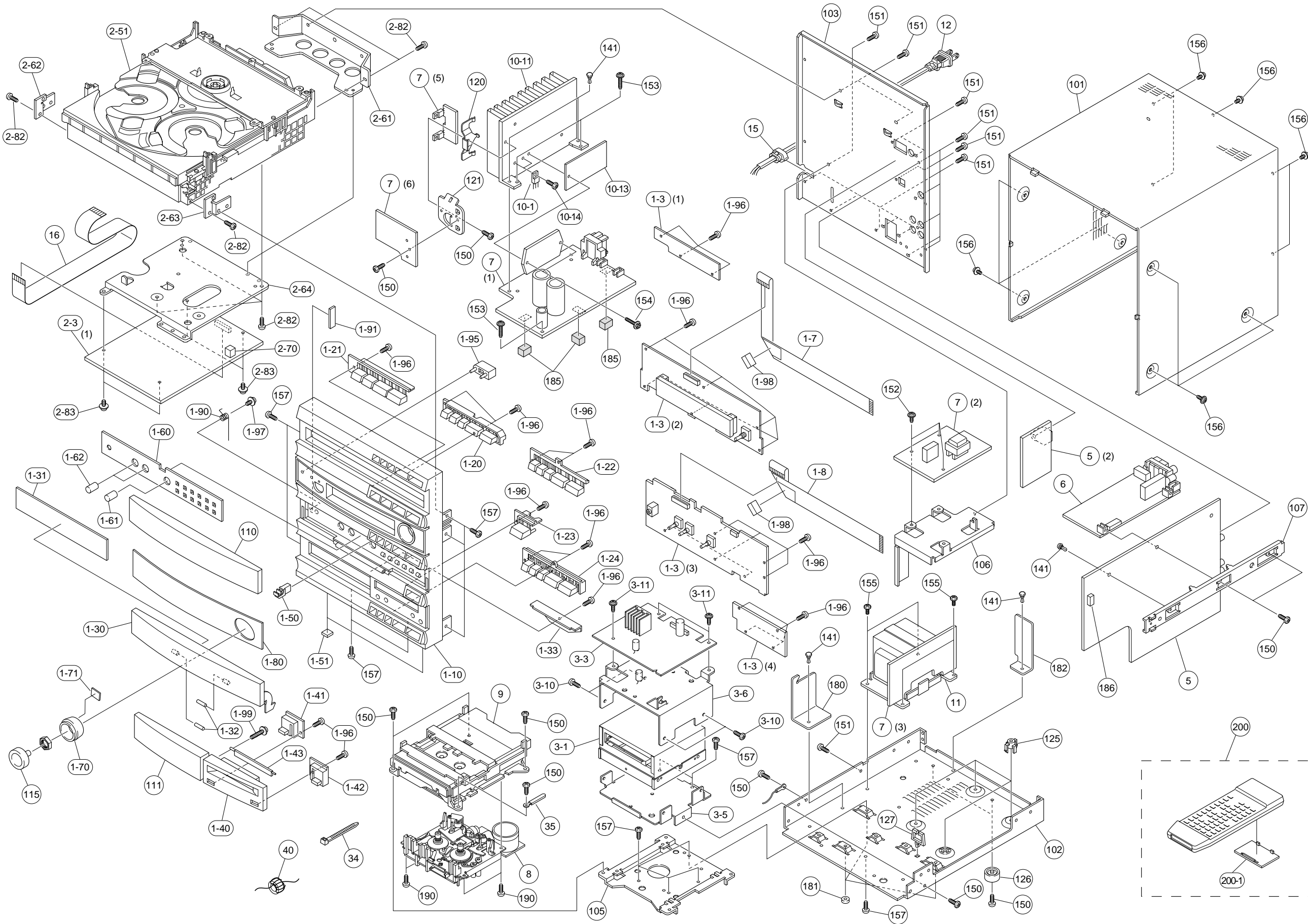
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6



MECHANICAL PARTS

Ref. No.	PART NO.	Description	Remarks	Markets
* 1- 3	V4003300	P.C.B. ASS'Y	OPERATION	
* 1- 7	V3728300	BAN-CARD	25P 380mm	
1- 8	MF125300	FLEXIBLE FLAT CABLE C&C	25P 300mm	
* 1-10	V3109300	FRONT PANEL		(A)
* 1-10	V3109400	FRONT PANEL-RDS		(BG)
1-20	V3109600	BUTTON	5P-CD	
1-21	V3110400	BUTTON	4P-CD	
1-22	V3110200	BUTTON	5P-INPUT	
1-23	V3110000	BUTTON	1P-STANDBY	
1-24	V3109700	BUTTON	5P-OPERATION	
* 1-30	V3223300	LID/PANEL		(A)
* 1-30	V3223400	LID/PANEL		(BG)
1-31	V3112100	SHEET	LID	
1-32	V3263300	SPRING PIN	SUS 2x16mm	
1-33	V3188400	STOPPER, PIN		
* 1-40	V3111500	LID	3H-MD	
1-41	V3109800	BUTTON	1P-EJ	
* 1-42	V3109900	BUTTON	1P-MD	
* 1-43	V3111900	STAY, FLAP		
1-50	V3263200	MINI SIDE ROCK	091Y	
1-51	VS010000	CUSHION, LEG		
* 1-60	V3112500	PLATE, SP		(A)
* 1-60	V3112600	PLATE, SP-RDS		(BG)
* 1-61	V3110700	KNOB, ED	D10	
1-62	V3110800	KNOB	D10	
1-70	V3237100	LENS, KNOB		
1-71	V3269700	REFLECTOR	LED	
1-80	V3113500	WINDOW, FL		
1-90	V3267500	SPRING	D6T	
1-91	V3272000	PAD, FRICTION		
1-95	V3112000	LENS	2P	
1-96	VD435300	BIND HEAD P-TITE SCREW	2.6x8 FCRM3-BL	
1-97	VA775100	PW HEAD P-TITE SCREW	3x8-10 FCRM3-BL	
* 1-98	V3750600	SUPPORT	FFC	
* 1-99	VH554600	PW HEAD P-TITE SCREW	2.6x10 FCRM3-BL	
* 2- 3	V4004200	P.C.B. ASS'Y	CD	
2-51	VU638400	CDC MECHANISM UNIT	YMHB310	
2-61	VU353900	FRAME	REAR	
2-62	VU354100	FRAME	F-L	
2-63	VU354200	FRAME	F-R	
2-64	VU915700	FRAME	PCB	
2-70	VQ861500	CUSHION	SHEET	
2-82	EP630220	BIND HEAD P-TITE SCREW	3x8 ZMC2-BL	
2-83	VT669300	PW HEAD B-TITE SCREW	3x8-8 MFC2	
3- 1	V3098100	MD RECORDER UNIT	MDM-98A	
* 3- 3	V4004000	P.C.B. ASS'Y	MD	
* 3- 5	V3107200	CHASSIS		
* 3- 6	V3107300	FRAME/MD		
3-10	EG330030	BIND HEAD SCREW	3x6 FCRM3-BL	
3-11	VT669300	PW HEAD B-TITE SCREW	3x8-8 MFC2	
* 5	V4003000	P.C.B. ASS'Y	INPUT	(A)
* 5	V4004100	P.C.B. ASS'Y	INPUT	(BG)
* 6	V4000300	P.C.B. ASS'Y	TUNER/TU-02	(A)
* 6	V4000400	P.C.B. ASS'Y	TUNER/TU-02	(BG)
* 7	V4001100	P.C.B. ASS'Y	MAIN	

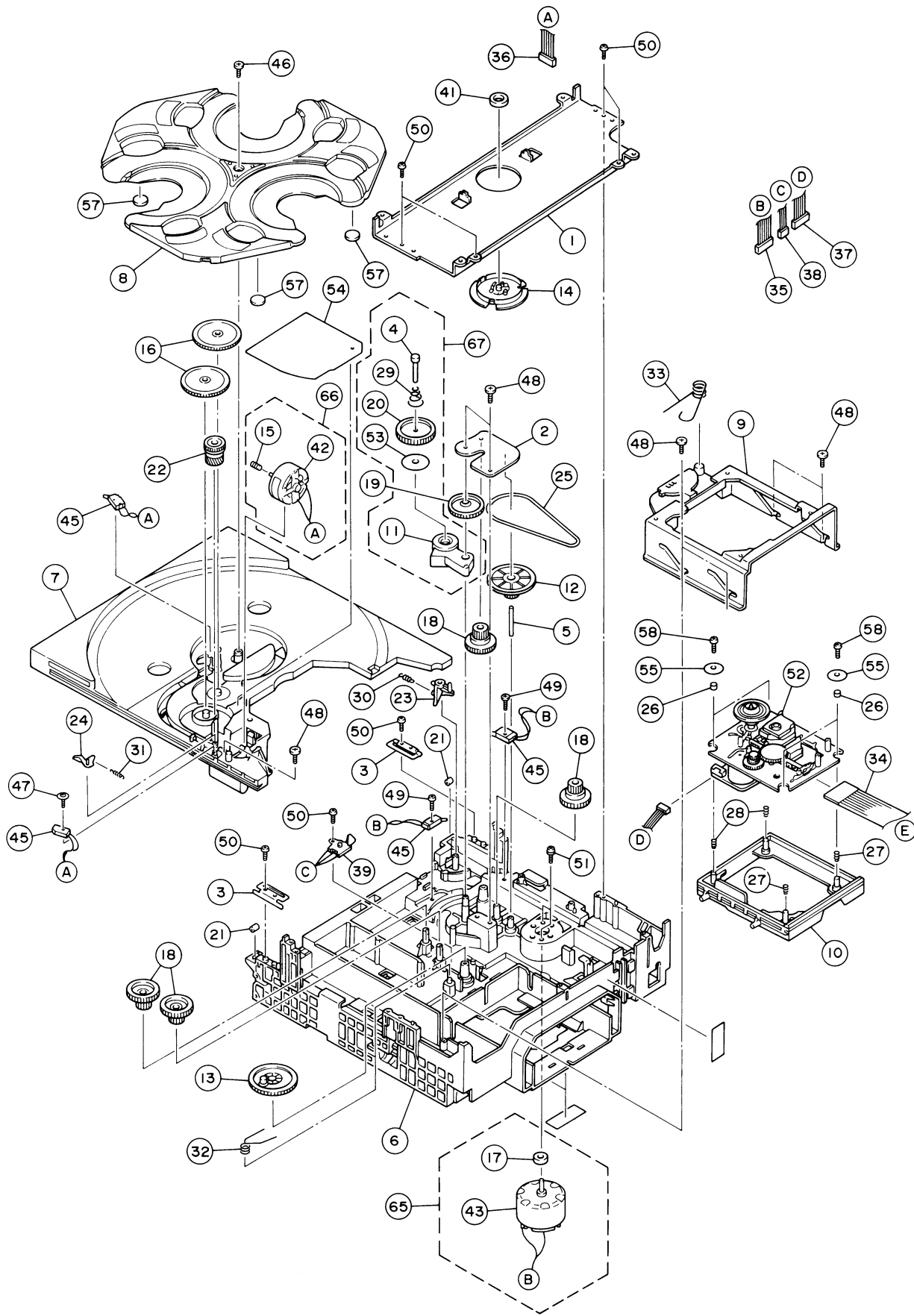
* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 8	AAX07650	CASSETTE DECK MECH. UINT		
* 9	AAX07660	LOADING UNIT		
△ # 10- 1	VR510800	TRANSISTOR	2SD2396 J,K	
* 10-11	V3621800	HEAT SINK		
10-13	VV877700	RADIATION SHEET	48x80 TBM-51W	
10-14	EP600830	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
△ 11	XW021A00	POWER TRANSFORMER		(A)
△ 11	XW022A00	POWER TRANSFORMER		(BG)
△ 12	V2296800	POWER CORD ASS'Y		(A)
△ 12	VN363700	POWER CORD ASS'Y		(G)
△ 12	VV437300	POWER CORD ASS'Y		(B)
15	V2438700	CORD STOPPER	10P1	
16	MF115300	FLEXIBLE FLAT CABLE C&C	15P 300mm	
34	VU590000	BINDING TIE	CBTD001B	
35	CB836200	BINDING TIE	S-70B	
40	VB933800	FERRITE CORE	BP53RB310190NOA	(BG)
* 101	V3505700	TOP COVER		
102	V3104200	CHASSIS, MAIN		
* 103	V3106600	REAR PANEL		(BG)
* 103	V3588600	REAR PANEL		(A)
105	V3107000	CHASSIS, CASSETTE		
106	V3107100	FRAME, TRANSFORMER		
107	V3107400	FRAME, SIDE		
110	V3110900	LID	CD	
111	V3111300	LID	CASSETTE	
115	V3110600	KNOB	D32	
120	V2847700	SUPPORT, IC		
* 121	V3737600	SUPPORT, PWB		
125	VR264400	SPACER	H8	
126	VS009900	LEG	22x12.5	
* 127	V3425400	WIRE CLIP	Y0524	
141	VQ368600	PUSH RIVET	P3555-B	
150	EP600830	BIND HEAD B-TITE SCREW	3x8 FCRM3-BL	
151	VN413300	BIND HEAD BONDING B-T. SCREW	3x8 MFZN2-BL	
152	VT669300	PW HEAD B-TITE SCREW	3x8-8 MFC2	
153	VT669400	PW HEAD B-TITE SCREW	3x15-8 MFC2	
154	VK865300	HEX. HEAD TAP. SCREW WITH WS	3x18 FCRM3-BL	
155	V2728500	BIND HEAD S-TITE SCREW	4x7 MFZN2-BL	
156	VE529700	PW HEAD B-TITE SCREW	3x6-8 FCRM3-BL	
157	EP600130	BIND HEAD B-TITE SCREW	3x6 ZMC2-Y	
* 180	V4096200	SHEET, HANGER		
* 181	V4095100	PAD	SCREW	
* 182	V4175200	SHEET, REAR		(BG)
185	V2879500	SPACER PCB-M		
186	VS936800	DAMPER	3x5x10	
190	EP600290	BIND HEAD P-TITE SCREW	3x6 ZMC2-Y	
* 200 200-1		ACCESSORIES		
	V3192000	REMOTE CONTROL TRANSMITTER	SBAN20188A SYS20	
	AAX03320	LID	35x55BLALPS	
	VQ147100	ANTENNA, FM	1.4m	
	VR248500	ANTENNA, AM LOOP	1.0m	
		BATTERY, MANGANESE	SUM-3,AA,R06	

* New Parts

GX-900

EXPLODED VIEW (CD Mechanism Unit)



MECHANICAL PARTS (CD Mechanism Unit)

Ref. No.	PART NO.	Description	Remarks	Markets
* VU638400	CDC MECHANISM UNIT	YMHB310	YMHB310	
1	CX679550	BRACKET, CLAMP	C3B1007	
2	CX679540	BRACKET, GEAR	C3D1002	
3	CX679560	BRACKET, TRAY	C3D1003	
4	AX623770	SHAFT, FRICTION-B	C3D8014	
5	AX623780	SHAFT, PULLEY	C3D2002	
6	AX623930	CHASSIS, MAIN	C3A3001	
7	CX679430	TRAY, SLIDE	C3A3002	
8	CX679440	TRAY, ROTARY	C3A3003	
9	CX679410	SLIDER, LIFT	C3B3024	
10	AX623880	FRAME, MD-B	C3B3023	
11	AX623620	ARM, FRICTION	C3C3006	
12	AX623900	PULLEY, LOAD	C3C3010	
13	CX679280	CAM GEAR, UP/DOWN	C3C3014	
14	CX679380	CLAMPER	C3C3020	
15	CX679320	GEAR, WORM	C3D3007	
16	CX679310	GEAR, IDLER	C3D3008	
17	JX601690	MOTOR, PULLEY (B)	PD3039	
18	CX679360	GEAR, LOAD	C3D3011	
19	CX679330	GEAR, CENTER	C3D3012	
20	CX679340	GEAR, FRICTION	C3D3013	
21	AX623940	ROLLER, TRAY	C3D3015	
22	CX679350	GEAR, HELICAL	C3D3017	
23	CX679650	LEVER, LOCK	C3D3018	
24	CX679640	LEVER, BRAKE	C3D3029	
25	CX679460	DRIVE BELT	C3D4001	
26	CX679260	INSULATOR	C3D4003	
27	EX603440	SPRING, MD-H	C3D6012	
28	EX603430	SPRING, MD-G	C3D6011	
29	EX603460	SPRING, FRICTION	C3D6003	
30	EX603490	SPRING, LOCK	C3D6005	
31	EX603470	SPRING, BRAKE	C3D6006	
32	EX603450	SPRING, CAM	C3D6007	
33	EX603480	SPRING, LEFT	C3D6013	
34	LX610060	FFC	C3D9017	
35	MX605000	WIRE	C3D9019	
36	MX604960	FLAT WIRE	C3D9018	
37	MX605010	WIRE	C3D9020	
38	MX605020	WIRE	C3D9021	
39	CX679670	LEVER SWITCH	SSCF	
41	AX623920	MAGNET	T990544	
42	JX601670	MOTOR	RF-500TB-12560	91300130
43	JX601680	MOTOR	MNN-6F1LBOK	91433136
45	CX679660	LEVER SWITCH	JPS1220-0201	94437095
46	EX603600	SCREW (F)		C3D8010
47	EX603570	SCREW (B)		C3D8004
48	EX603580	SCREW (C)		C3D8005
49	EX603630	BIND HEAD TAPPING SCREW	2x12	8114512012
50	EX603640	BIND HEAD TAPPING SCREW	2.6x8	8114512608
51	EX603590	SCREW (E)		C3D8009
52	NX635360	TRAVERSE UNIT	KSM-213BCM	90438002
53	CX679510	FELT, FRICTION		C3D8001
54	CX679270	NEW COVER		C3D8019

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
55	EX603810	WASHER	C3D8018	
57	CX679400	SHEET, TRAY-B	C3D8015	
58	EX603620	BIND HEAD TAPPING SCREW	8114512008	
65	JX601720	MOTOR ASS'Y, PULLEY	C3D9008	
66	JX601700	MOTOR ASS'Y, WORM	C3D9007	
67	AX623870	FRICTION ARM ASS'Y	C3D3022	

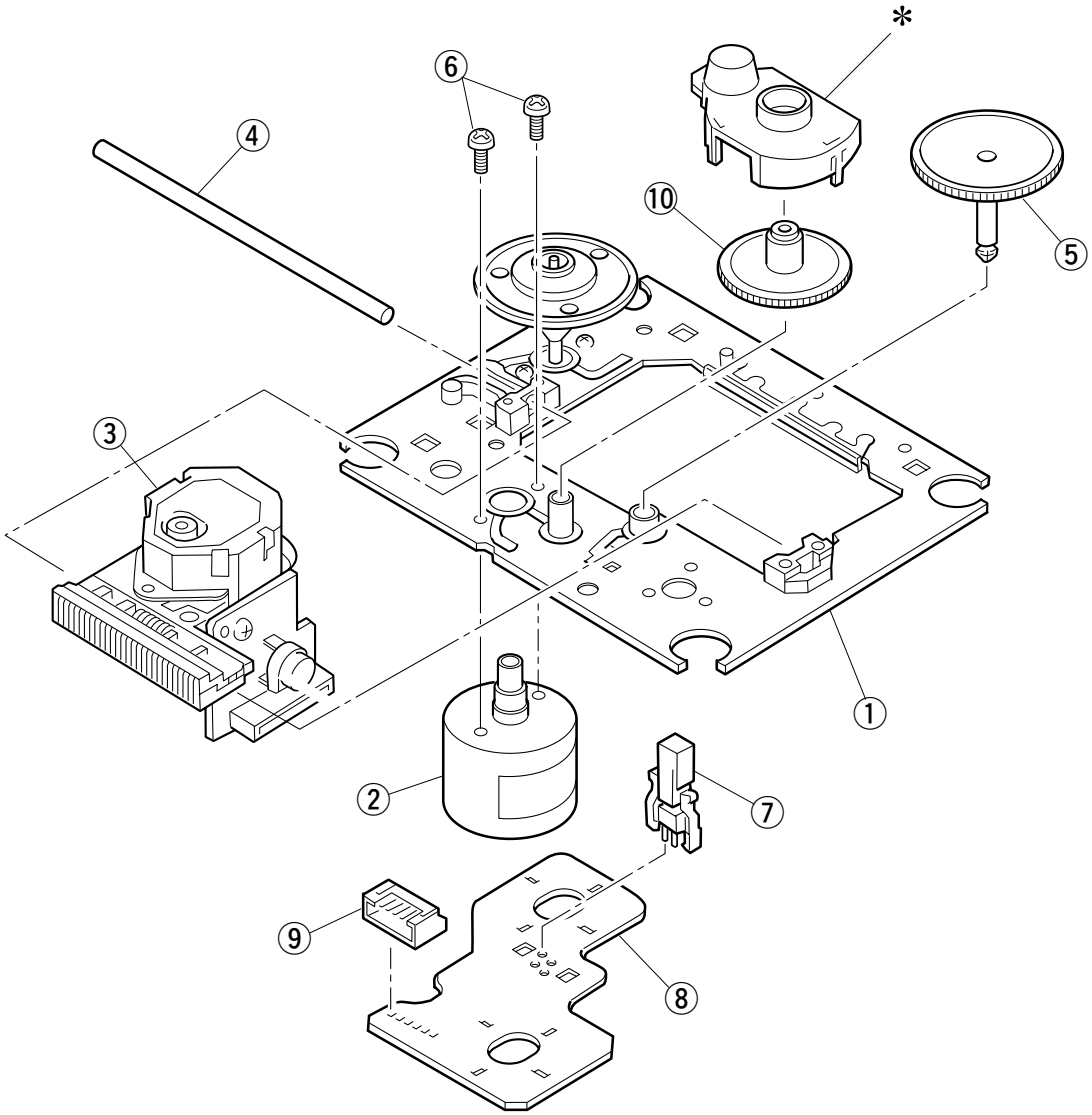
* New Parts

A	B	C	D	E
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GX-900

EXPLODED VIEW (Traverse Unit)

Note : The parts marked with an asterisk (*) are not available separately.
They are included in a Traverse Unit and supplied as that unit.

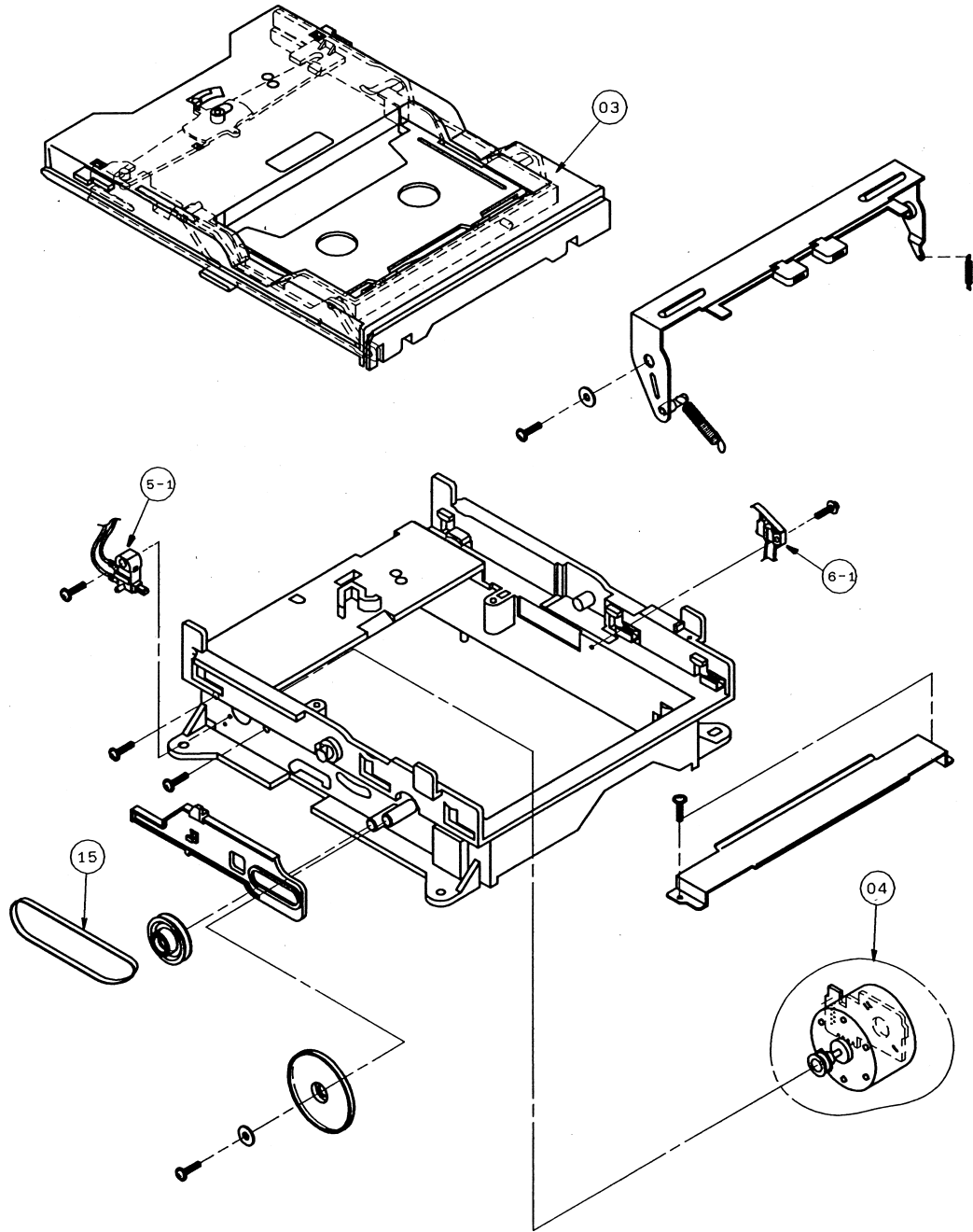


Ref. No.	PART NO.	Description	Remarks	Markets
	NX635360	TRAVERSE UNIT	KSM-213BCM	90438002
1	NX635420	MOTOR CHASSIS ASS'Y	(MB)	X26258771
2	CX679710	MOTOR GEAR ASS'Y		X26257691
3	PX601970	OPTICAL DEVICE	KSS-213B(RP)	884836711
4	AX623980	SLED SHAFT		262690801
5	CX679720	GEAR, A	(S)	262690701
6	EA020036	PAN HEAD SCREW	2x3 ZMC2-Y	762125515
7	KX604660	LEAF SWITCH		157208511
8	NX613040	PWB, MOTOR	6P(S)	163967813
9	LX610120	CONNECTOR PIN	6P	156472211
10	CX680030	GEAR		262700301

* New Parts

GX-900

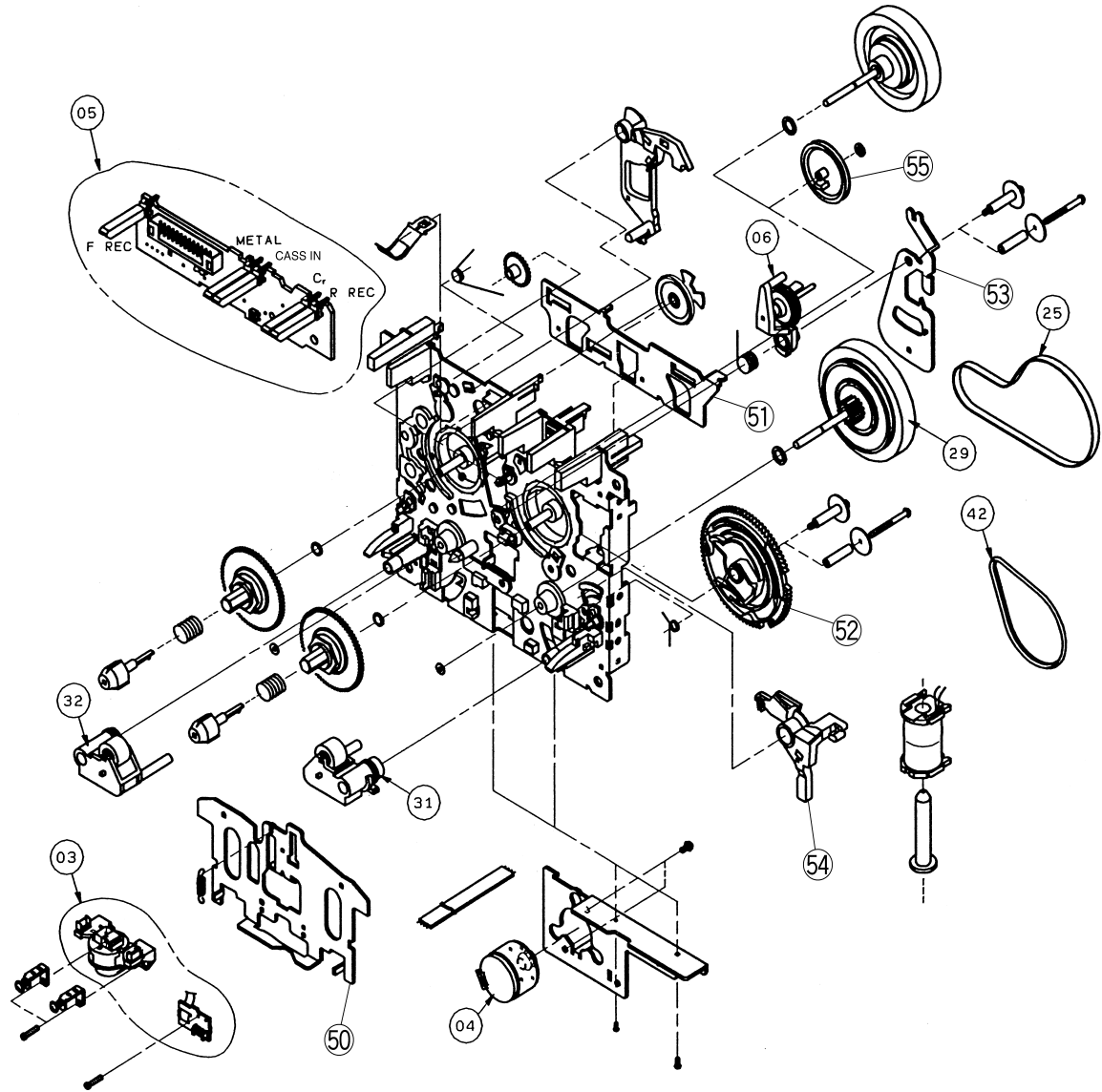
EXPLODED VIEW (Loading Unit)



Ref. No.	PART NO.	Description	Remarks	Markets
	AAX07660	LOADING UNIT	F511630	
* 3	AAX07480	HOLDER CST BLOCK	F527078	
* 4	AAX07460	MTR REEL BLOCK	F564313	
* 5-1	AAX07510	SWITCH	UE15S14	
* 6-1	AAX07520	SWITCH	UE18P21	
* 15	AAX07580	BELT	FF19L12	LOADING

* New Parts

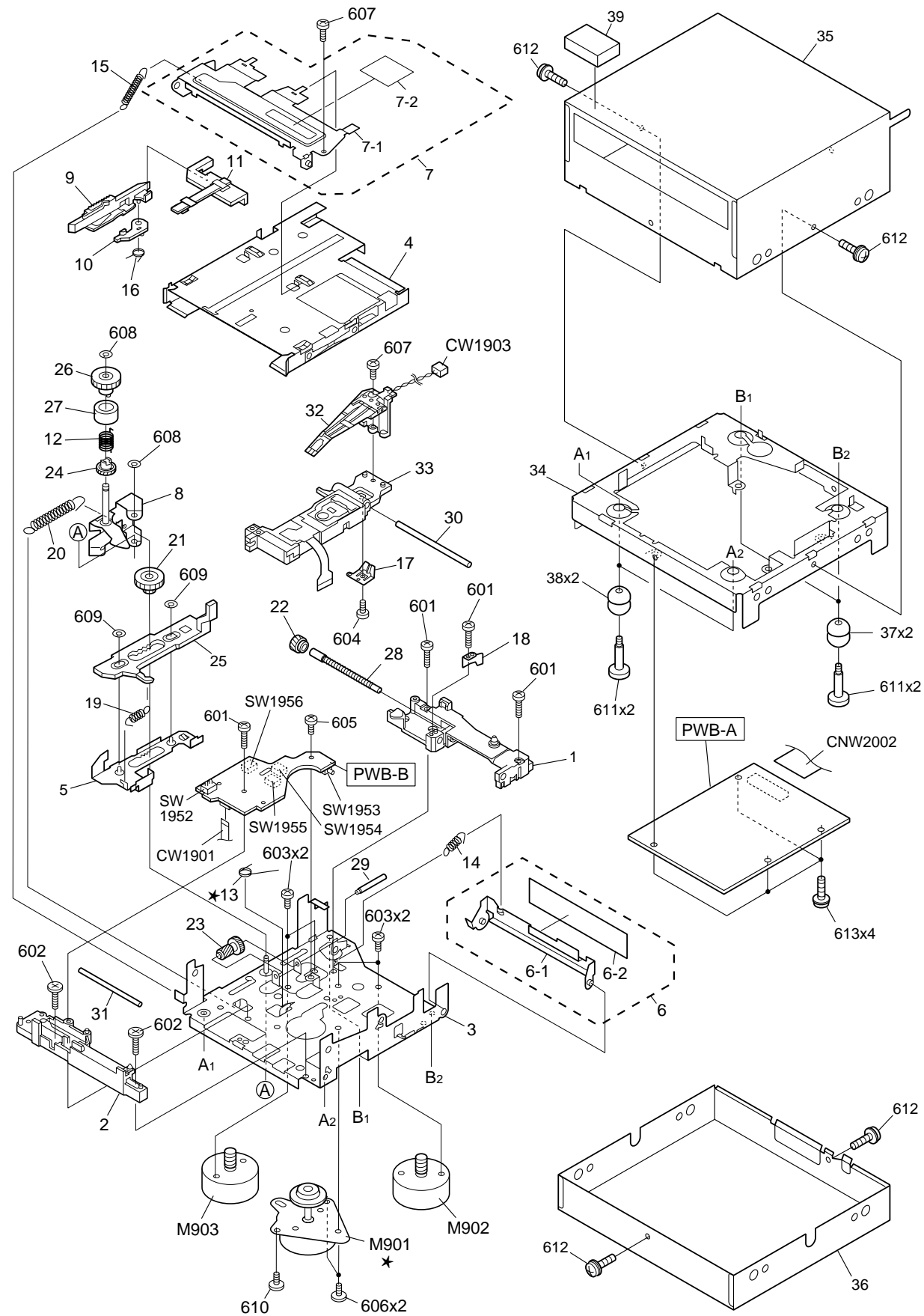
EXPLODED VIEW (Cassette Deck Mech. Unit)



Ref. No.	PART NO.	Description	Remarks	Markets
* 3	AAX07650	CASSETTE DECK MECH. UNIT	F511638	
* 4	AAX07550	PLATE HD BLOCK	F513831	
* 5	AAX07450	MTR MAIN BLOCK	F525327	
* 6	AAX07470	PCB CONTROL BLOCK	F567626	
* 6	AAX07490	CLUTCH ASS'Y BLOCK	F522037	
* 25	AAX07570	BELT	FF19H11	MAIN
* 29	AAX07500	CLUTCH ASS'Y BLOCK	F522048	
* 31	AAX07530	ROLLER PINCH BLOCK	F514129	R
* 32	AAX07540	ROLLER PINCH BLOCK	F514130	L
* 42	AAX07560	BELT	FF18W12	F/R
50	AX623570	HEAD BASE	FC61K28	
51	AX622210	PLATE, SLIDE	FC61L17	
52	CX677140	CAM, GEAR	FD52Y20	
53	CX677130	LEVER	FC62G12	F/R
54	AX623590	LOCK LEVER	FD53D19	
55	CX679800	PULLEY, CLUTCH	FD53F14	

* New Parts

EXPLODED VIEW (MD Recorder Unit)



★ When replacing the motor (M901), be sure to replace the spin spring (13) at the same time (because its shape may vary).

MECHANICAL PARTS (MD Recorder Unit)

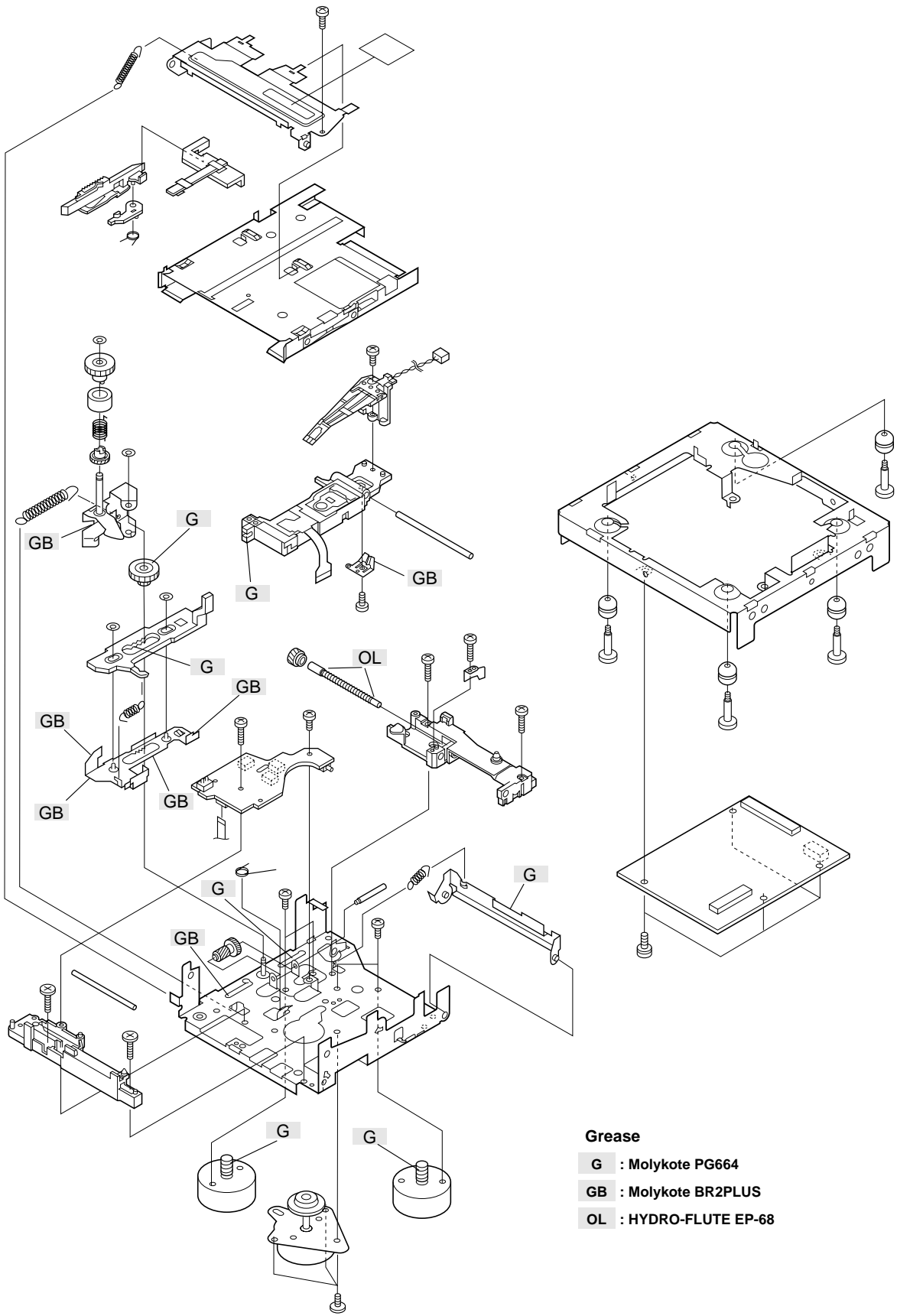
Ref. No.	PART NO.	Description	Remarks	Markets
*	V3098100	MD RECORDER UNIT	V3098100	
* 1	AAX02240	MD GUIDE	LANGF0033AWZZ	
* 2	AAX02250	MD GUIDE	LANGF0034AWZZ	
* 3	AAX02930	DRIVE CHASSIS	LCHSM0080AWM1	
* 4	AAX02270	CARTRIDGE HOLDER	LHLDX3004AWM1	
* 5	AAX02280	CAM PLATE LEVER	MLEVF0036AWM1	
* 6	AAX02130	SHIFT ARM ASSY	MLEVF0025AWM1	
* 6-1	AAX02120	SHIFT ARM	MLEVF0025AWZZ	
* 6-2	AAX01510	SHEET, LEAD PROTECTION	PSHEP0026AWZZ	
* 7	AAX01480	HOLDER ARM ASSY	MLEVF0037AWM2	
* 7-1	AAX01460	HOLDER ARM	MLEVF0037AWM1	
* 7-2	AAX01440	SHEET, HEAD PROTECTION	PSHEP0024AWZZ	
* 8	AAX01600	ROLLER ARM LEVER	MLEVF0030AWM1	
* 9	AAX02310	CLUTCH LEVER	MLEVP0075AWZZ	
* 10	AAX02290	CATCH	MLEVP0076AWZZ	
* 11	AAX02440	SLIDER LEVER	MLEVP0077AWZZ	
* 12	AAX01590	SPRING, ROLLER HOLDER	MSPRD0103AWFJ	
* 13	AAX02430	SPRING, SPIN	MSPRD0105AWFJ	
* 14	AAX02370	SPRING, SHIFT ARM	MSPRD1318AFFJ	
* 15	AAX01470	SPRING, HOLDER ARM	MSPRD1319AFFJ	
* 16	AAX02300	SPRING, CATCH	MSPRD1334AFFJ	
* 17	AAX01680	SPRING, LEAF	MSPRP0015AWFJ	
* 18	AAX02950	SPRING, DRIVE SHAFT	MSPRP0017AWFJ	
* 19	AAX01500	SPRING, RACK	MSPRT0018AWFJ	
* 20	AAX01570	SPRING, ROLLER	MSPRT1566AFFJ	
* 21	AAX01540	LOADING GEAR	NGERH0066AWZZ	
* 22	AAX02920	DRIVE GEAR	NGERH0067AWZZ	
* 23	AAX01530	LOADING GEAR	NGERH0068AWZZ	
* 24	AAX01560	ROLLER GEAR	NGERH0084AWZZ	
* 25	AAX01490	RACK GEAR	NGERR0002AWZZ	
* 26	AAX01580	ROLLER HOLDER	NROLP0010AWZZ	
* 27	AAX02910	TRANSFER ROLLER	NROLR0001AWZZ	
* 28	AAX02940	DRIVING SHAFT	NSFTD0005AWFT	
* 29	AAX01520	LOADING GEAR SHAFT	NSFTM0017AWFW	
* 30	AAX01310	PICKUP SLIDE SHAFT	MSFTM0277AFFW	
* 31	AAX01320	PICKUP GUIDE SHAFT	NSFTM0278AFFW	
* 32	AAX01640	MAGNETIC HEAD	RCILH0108AFZZ	
* 33	AAX01630	OPTICAL PICKUP	RCTRH8190AFZZ	
* 34	AAX01450	BASE FRAME	LANGK0092AWFW	
* 35	AAX01650	UPPER COVER	PCOV3021AWFW	
* 36	AAX01670	BOTTOM COVER	PCOV3022AWFW	
* 37	AAX01700	RUBBER, UNTI-VIBRATION	PCUSG0672AFSA	
* 38	AAX01690	RUBBER, UNTI-VIBRATION	PCUSG0672AFSB	
* 39	AAX01430	CUSHION, HEAD	PCUSS0041AWZZ	
* 601	AAX02960	SCREW	M1.7x9.5	LXBZ0030AWZZ
* 602	AAX02970	SCREW	M1.7x7.5	LXBZ0031AWZZ
* 603	AAX02980	SCREW	M1.7x2	LXBZ0032AWZZ
* 604	AAX03000	SCREW	M1.4x2.2	LXBZ0804AFFF
* 605	AAX03010	SCREW	M1.7x3	LXBZ0846AFZZ
* 606	AAX01260	SCREW	M1.7x2.5	LXBZ0851AFZZ
* 607	AAX01280	SCREW	M1.7x5	LXBZ0883AFZZ
* 608	AAX01610	WASHER	1.5x3.2x0.5	LXWZ9268AFZZ

* New Parts

Ref. No.	PART NO.	Description	Remarks	Markets
* 609	AAX01620	WASHER	1.2x3x0.2	LXWZ9269AFZZ
* 610	AAX02990	SCREW	M1.7x2.1	LXBZ0036AWZZ
* 611	AAX01270	SCREW	M1.7x8.9	LXBZ0852AFFD
* 612	AAX01290	SCREW	M2x4	XBPSD20P04K00
* 613	AAX01300	SCREW	M1.7x3	XSPSN17P03K00
* CNW2002	AAX02110	MD FLAT CABLE	28P	QCNWN6763AFM1
* M901	AAX02420	MOTOR, SPINDLE		RMOTV0012AWZZ
* M902	AAX01330	MOTOR, FEED		RMOTV0013AWM2
* M903	AAX01550	MOTOR, LOAD		RMOTV0014AWM1

* New Parts

GREASE APPLICATION DIAGRAM
(MD Recorder)



GREASE APPLICATION DIAGRAM (CD Mechanism)

● Grease to be supplied

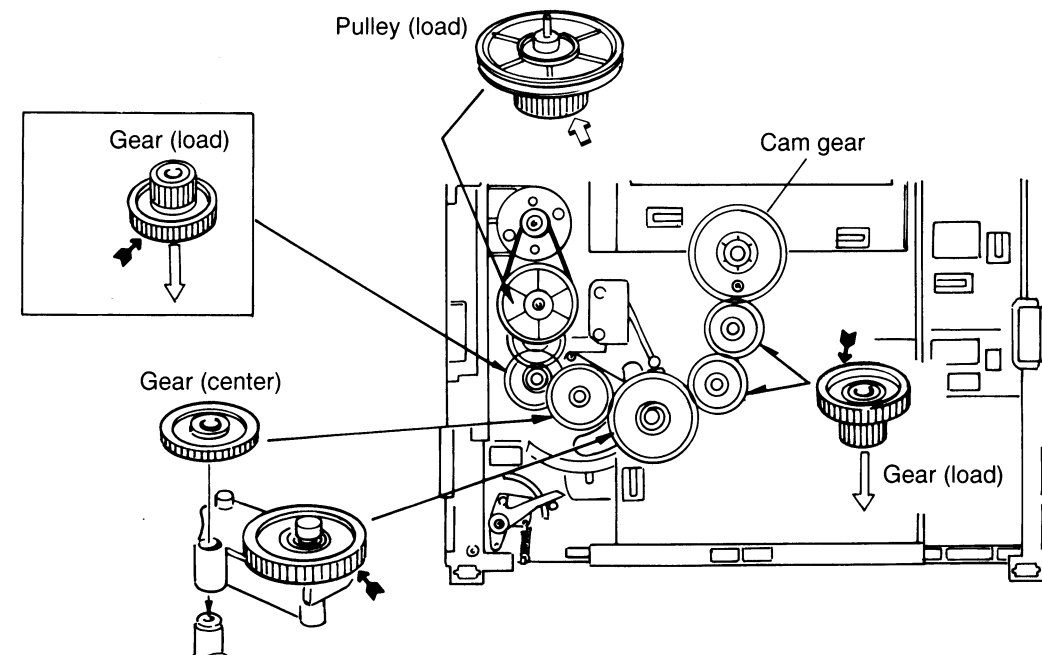
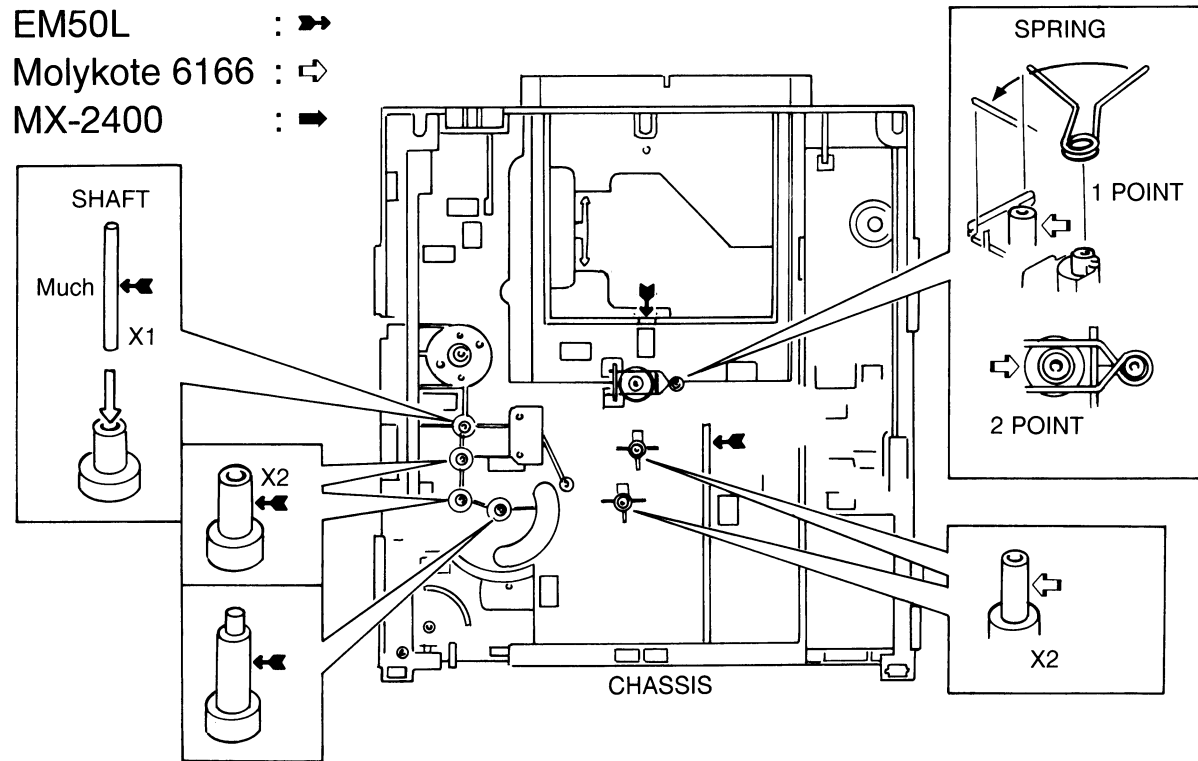
The same grease as that originally used is not available but a substitutive grease is supplied instead. When using this grease, however, make sure to wipe off the attached grease thoroughly before applying the new one.

Grease originally used	Grease to be supplied	
EM50L	FLOIL G-351	P/NO. TX913160
Molykote 6166	FLOIL G-351	P/NO. TX913160
MX-2400	FLOIL G-351	P/NO. TX913160

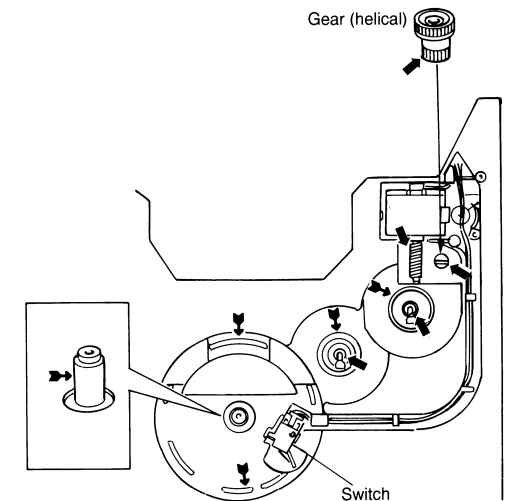
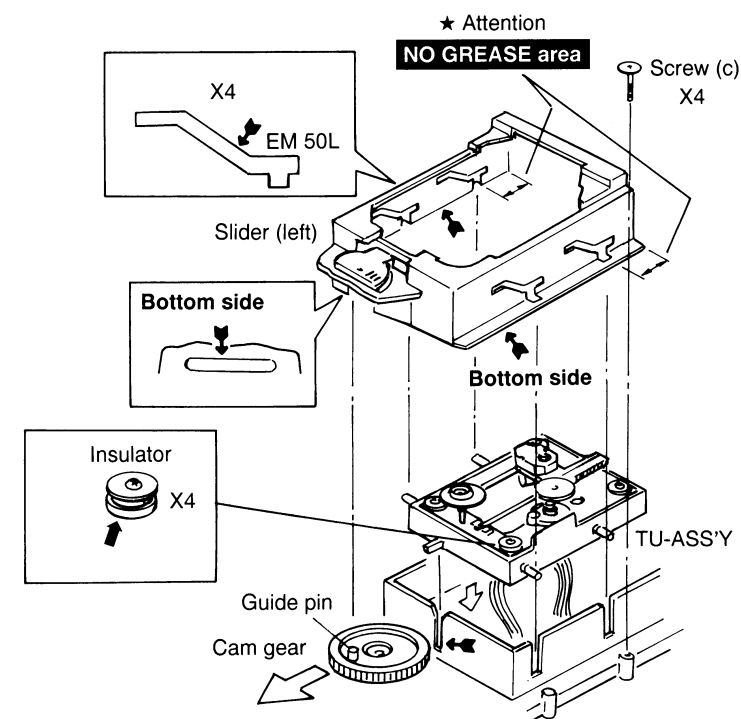
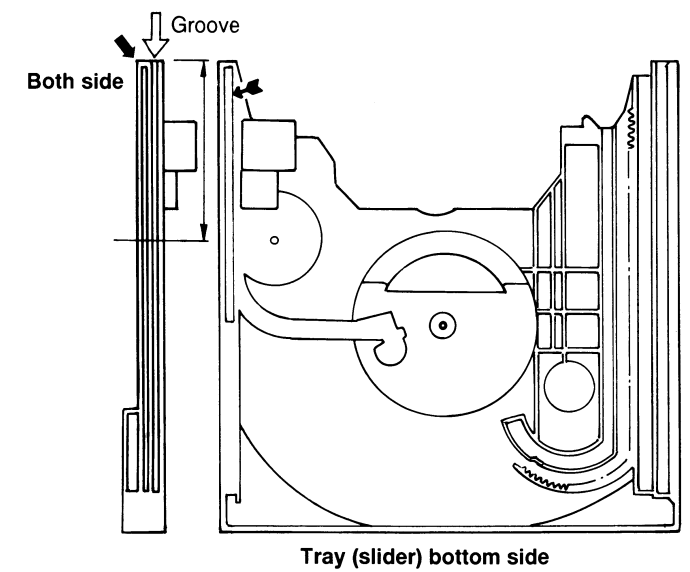
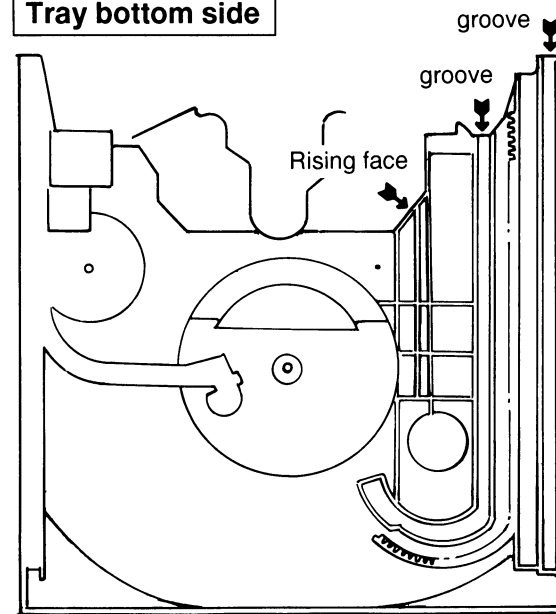
EM50L : ➡

Molykote 6166 : ➡

MX-2400 : ➡

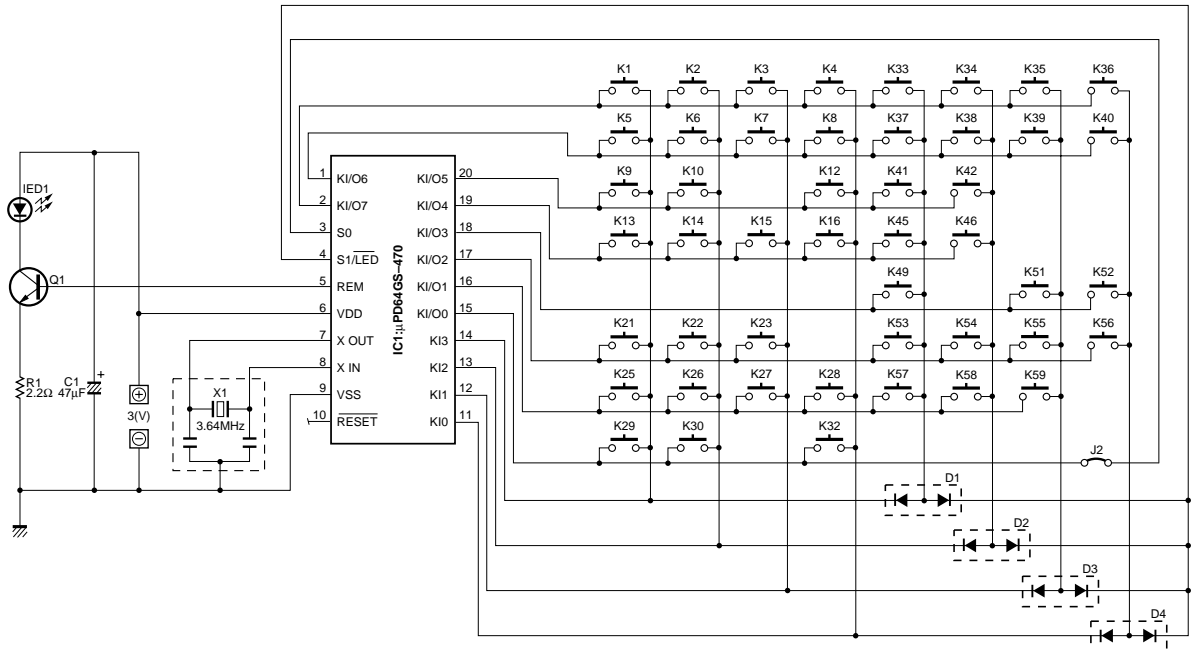


Tray bottom side

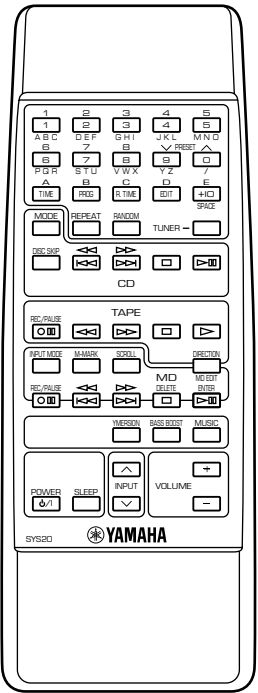
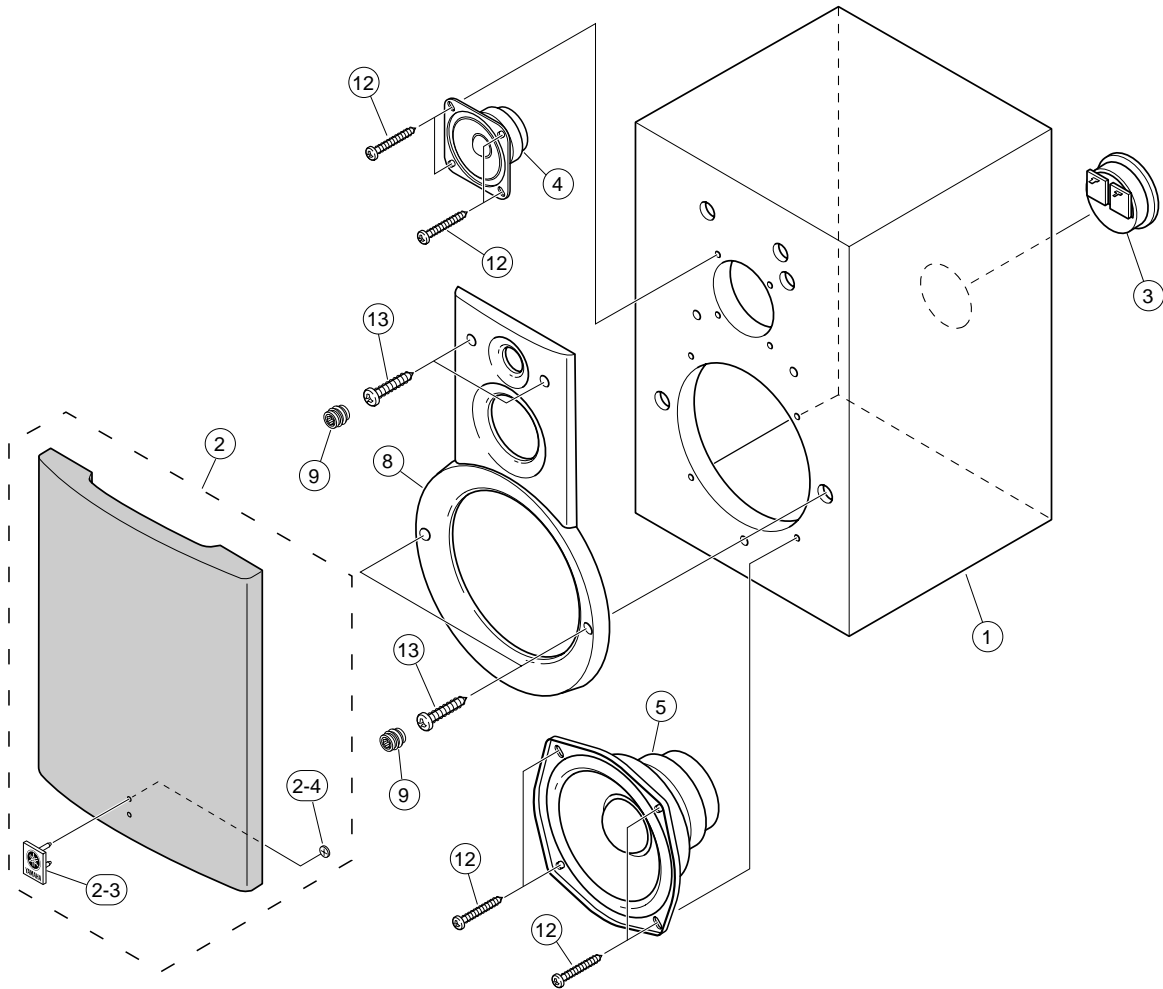


REMOTE CONTROL TRANSMITTER

■ SCHEMATIC DIAGRAM



■ NX-GX500 EXPLODED VIEW



Key No.	FUNCTION	CUSTOM (HEX)	DATA (HEX)
1	2	78	12
2	3	78	13
3	4	78	14
4	5	78	15
5	PROG (CD)	78	0B
6	R. TIME (CD)	78	08
7	EDIT (CD)	78	09
8	+10	78	1A
9	REPEAT (CD)	78	0C
10	RANDOM (CD)	78	07
12	TUNER	78	4B
13	◀◀ (CD)	78	04
14	▶▶ (CD)	78	03
15	■ (CD)	78	01
16	▶▶ (CD)	78	02
21	INPUT MODE (MD)	78	D5
22	M-MARK (MD)	78	D6
23	SCROLL (MD)	78	D7
25	DIRECTION (TAPE) MD EDIT	78	D8
26	MUSIC	78	5A
27	VOLUME +	78	1E
28	⏻/I POWER	78	0F
29	SLEEP	78	4F
30	INPUT ∨	78	40

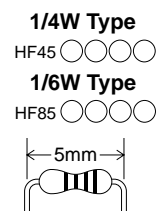
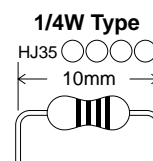
Key No.	FUNCTION	CUSTOM (HEX)	DATA (HEX)
32	VOLUME -	78	1F
33	● REC/PAUSE (TAPE)	78	46
34	◀◀ (TAPE)	78	45
35	▶▶ (TAPE)	78	44
36	■ (TAPE)	78	41
37	▶ (TAPE)	78	42
38	● REC/PAUSE (MD)	78	D4
39	◀◀ (MD)	78	D3
40	▶▶ (MD)	78	D2
41	■ (MD)	78	D0
42	▶▶ ENTER (MD)	78	D1
45	YMERSON	78	5B
46	BASE BOOST	78	85
49	INPUT ^	78	5E
51	1	78	11
52	6	78	16
53	7	78	17
54	8	78	18
55	9	78	19
56	0	78	10
57	TIME (CD) A	78	0A
58	MODE	78	5D
59	DISC SKIP	78	0D

Ref. No.	PART NO.	Description	Remarks	Markets
* 1	V3592800	SPEAKER CABINET	CH	
* 1	V3592900	SPEAKER CABINET	BL	
* 2	V3593000	FRONT GRILLE ASS'Y	CH	
* 2	V3593100	FRONT GRILLE ASS'Y	BL	
2-3	V2192200	EMBLEM	YAMAHA	
2-4	VP161000	PUSH NUT	SPN1.5	
* 3	V3594000	SPEAKER TERMINAL	213-S5305	
* 4	XV819A00	LOUD SPEAKER JA05U1	5cm	
* 5	XV821A00	LOUD SPEAKER JA13590	13cm	
* 8	V3490500	FRONT PANEL		
* 9	V3594600	CATCHER		
12	EP030580	BINDING HEAD TAPPING SCREW	3.5x20 MFZN2-BL	
13	EP040250	BIND HEAD TAPPING SCREW	4x16 ZMC2-BL	
* 13	V3593700	ACCESSORIES SPEAKER CORD ASS'Y		

* New Parts

Parts List for Carbon Resistors

Value	1/4W Type Part No.	1/6W Type Part No.	Value	1/4W Type Part No.	1/6W Type Part No.
1.0 Ω	HJ35 3100	HF85 3100	10 k Ω	HF45 7100	HF45 7100
1.8 Ω	HJ35 3180	※	11 k Ω	HF45 7110	HF45 7110
2.2 Ω	HJ35 3220	HF85 3220	12 k Ω	HJ35 7120	HF85 7120
3.3 Ω	HJ35 3330	HF85 3330	13 k Ω	HF45 7130	HF45 7130
4.7 Ω	HJ35 3470	HF85 3470	15 k Ω	HF45 7150	HF45 7150
5.6 Ω	HJ35 3560	HF85 3560	18 k Ω	HF45 7180	HF45 7180
10 Ω	HF45 4100	HF45 4100	22 k Ω	HF45 7220	HF45 7220
15 Ω	HJ35 4150	HF85 4150	24 k Ω	HF45 7240	HF45 7240
22 Ω	HF45 4220	HF45 4220	27 k Ω	HJ35 7270	HF85 7270
27 Ω	HJ35 4270	HF85 4270	30 k Ω	HF45 7300	HF45 7300
33 Ω	HF45 4330	HF45 4330	33 k Ω	HF45 7330	HF45 7330
39 Ω	HJ35 4470	HF85 4390	36 k Ω	HF45 7360	HF45 7360
47 Ω	HF45 4470	HF45 4470	39 k Ω	HF45 7390	HF45 7390
56 Ω	HF45 4560	HF45 4560	47 k Ω	HF45 7470	HF45 7470
68 Ω	HF45 4680	HF45 4680	51 k Ω	HF45 7510	HF45 7510
75 Ω	HF45 4750	HF45 4750	56 k Ω	HF45 7560	HF45 7560
82 Ω	HF45 4820	HF45 4820	62 k Ω	HF45 7620	HF45 7620
91 Ω	HF45 4910	HF45 4910	68 k Ω	HF45 7680	HF45 7680
100 Ω	HF45 5100	HF45 5100	82 k Ω	HF45 7820	HF45 7820
110 Ω	HJ35 5110	HF85 5110	91 k Ω	HF45 7910	HF45 7910
120 Ω	HF45 5120	HF45 5120	100 k Ω	HF45 8100	HF45 8100
150 Ω	HF45 5150	HF45 5150	110 k Ω	HF45 8110	HF45 8110
160 Ω	HJ35 5160	※	120 k Ω	HF45 8120	HF45 8120
180 Ω	HF45 5180	HF45 5180	150 k Ω	HF45 8150	HF45 8150
200 Ω	HF45 5200	HF45 5200	180 k Ω	HF45 8180	HF45 8180
220 Ω	HF45 5220	HF45 5220	220 k Ω	HJ35 8220	HF85 8220
270 Ω	HF45 5270	HF45 5270	270 k Ω	HF45 8270	HF45 8270
330 Ω	HF45 5330	HF45 5330	300 k Ω	HF45 8300	HF45 8300
390 Ω	HF45 5390	HF45 5390	330 k Ω	HF45 8330	HF45 8330
430 Ω	HF45 5430	HF45 5430	390 k Ω	HJ35 8390	HF85 8390
470 Ω	HF45 5470	HF45 5470	470 k Ω	HF45 8470	HF45 8470
510 Ω	HF45 5510	HF45 5510	560 k Ω	HJ35 8560	HF85 8560
560 Ω	HF45 5560	HF45 5560	680 k Ω	HJ35 8680	HF85 8680
680 Ω	HF45 5680	HF45 5680	820 k Ω	HJ35 8820	HF85 8820
820 Ω	HF45 5820	HF45 5820	1.0 M Ω	HF45 9100	HF45 9100
910 Ω	HF45 5910	HF45 5910	1.2 M Ω	HJ35 9120	※
1.0 k Ω	HF45 6100	HF45 6100	1.5 M Ω	HJ35 9150	HF85 9150
1.2 k Ω	HF45 6120	HF45 6120	1.8 M Ω	HJ35 9180	HF85 9180
1.5 k Ω	HF45 6150	HF45 6150	2.2 M Ω	HJ35 9220	HF85 9220
1.8 k Ω	HF45 6180	HF45 6180	3.3 M Ω	HJ35 9330	HF85 9330
2.0 k Ω	HJ35 6200	HF85 6200	3.9 M Ω	HJ35 9390	※
2.2 k Ω	HF45 6220	HF45 6220	4.7 M Ω	HJ35 9470	HF85 9470
2.4 k Ω	HJ35 6240	HF85 6240			
2.7 k Ω	HF45 6270	HF45 6270			
3.0 k Ω	HF45 6300	HF45 6300			
3.3 k Ω	HF45 6330	HF45 6330			
3.6 k Ω	HJ35 6360	HF85 6360			
3.9 k Ω	HF45 6390	HF45 6390			
4.7 k Ω	HF45 6470	HF45 6470			
5.1 k Ω	HF45 6510	HF45 6510			
5.6 k Ω	HF45 6560	HF45 6560			
6.8 k Ω	HF45 6680	HF45 6680			
8.2 k Ω	HF45 6820	HF45 6820			
9.1 k Ω	HF45 6910	HF45 6910			



GX-900

YAMAHA

GX-900

